ENVIRONMENTAL IMPACT ASSESSMENT REPORT
VOLUME 2 – APPENDICES

STRATEGIC HOUSING DEVELOPMENT (SHD) AT FORMER CENTRAL MENTAL HOSPITAL, DUNDRUM, DUBLIN 14



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MARCH 2022

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Planning and Environmental Consultants

Winter Bird Survey Report 2020/2021

TPA Bird Surveys, Dundrum, Co. Dublin



DOCUMENT DETAILS

Client:	**TPA**
Project Title:	**TPA Bird Surveys, Dundrum, Co. Dublin**
Project Number:	**200828**
Document Title:	**Winter Bird Survey Report 2020/2021**
Document File Name:	**200828 – F– Winter Bird Survey Report 2020/2021 – 2021.06.01**
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Planning and Environmental Consultants

Rev	Status	Date	Author(s)	Approved By
01	Draft	16/04/2021	KS	PM
02	Draft	04/05/2021	KS/PM	DO'D
02	Final	01/06/2021	KS/PM	DO'D

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1. INTRODUCTION

McCarthy Keville O'Sullivan (MKO) was appointed to carry out bird survey works at Dundrum, County Dublin during the period from September 2020 to March 2021 inclusive. The proposed development scheme consists of a large housing development on an area of built land dominated by hospital buildings alongside areas of amenity grassland. The site is approximately 11.4 ha in area and is located between the River Dodder to the north and Dundrum Town Centre to the south (Grid reference: 53.299560, -6.242815). Figure 1 (Appendix 2) provides a map of the location of the proposed development boundary.

This report describes the ornithological survey methods employed and survey data collected at Dundrum, County Dublin for the period from September 2020 to March 2021 inclusive. This report also contains information compiled during the desktop study. Particular attention has been paid to species of conservation importance and identified target species.

The report is supported by Technical Appendix 1 which contains the raw data from the winter bird surveys in 2020/2021. This includes detail on survey times, weather conditions, surveyors, survey results and other additional information. Maps containing flight data and significant flocks observed during surveys are shown in Appendix 2.

The report is structured as follows:

- An introduction describing the background and statement of authority regarding ornithological works.
- A description of the desktop study carried out with regard to the site.
- A comprehensive description of survey methods.
- A full description of results for all ornithological surveys conducted.
- A discussion of the potential impacts.

The following defines terms used in this report:

- "Zones of Influence" (ZOI) for potential ornithological receptors refers to the zone within which potential effects are anticipated. ZOIs were assigned following the best available guidance (SNH 2016 and McGuinness et.al 2015).

1.1 Statement of Authority

This report has been prepared by Kathryn Sheridan (M.Sc.), an Ornithologist with MKO, Patrick Manley (B.Sc.), a Project Ornithologist with MKO and Project Director, Dervla O'Dowd (B.Sc. Env.). The field surveys were undertaken in the 2020/2021 winter season by Donnacha Woods and Kathryn Sheridan, both of whom are competent experts in bird surveying.

CVs for the authors of this report and all personnel who carried out survey work are provided in Appendix 3.

2. DESK STUDY

2.1 Desk Study Methods

A comprehensive desk study was undertaken prior to surveys in winter 2020 to search for any relevant information on species of conservation concern which may potentially make use of the study area. The assessment included a thorough review of the available ornithological data including:

- Review of online web-mappers: National Parks and Wildlife Service (NPWS), National Biodiversity Data Centre (NBDC), Irish Wetland Bird Survey I-WeBS.
- Review of Birds of Conservation Concern (BoCCI) in Ireland 2020-2026 (Gilbert, et al. 2021)
- Review of Special Protection Areas: including site synopsis, SCI species and conservation objectives.

2.2 Desk Study Results

2.2.1 Identification of Designated Sites within the Likely Zone of Influence

In the absence of any specific European or Irish guidance on the core foraging range, the Scottish Natural Heritage (SNH) Guidance, 'Assessing Connectivity with Special Protection Areas (SPA)' (2016) was consulted. This document provides guidance concerning the identification of connectivity between proposed development proposals and Special Protection Areas. The guidance takes into consideration the distances some species may travel beyond the boundary of their SPAs and outlines information on dispersal and foraging ranges of bird species which are frequently encountered when considering plans and projects. Using GIS software, SPAs within a potential 15km ZOI of the proposed development were identified.

The nearest SPA, South Dublin Bay and Tolka River Estuary SPA is located to the northeast of the proposed development opposite the N11. The SPA is located 2.8km from the proposed development area and comprises the intertidal area between the River Liffey and Dun Laoghaire, the River Tolka estuary to the north of the River Liffey and Booterstown Marsh. The SPA is an important foraging site for an internationally important population of Brent Geese due to the beds of Eelgrass at the Merrion Gates and serves as an important staging/passage site for several tern species in autumn.

Designated sites located within the Likely Zone of Influence are listed below in Table 2-1 and illustrated in Appendix 2, Figure 2.

Table 2-1 Designated sites within likely zone of influence

Designated site and code	Distance from proposed development (Km)	Qualifying Interests/Special Conservation Interests for which the European Site has been designated (https://www.npws.ie, last viewed 13/04/2021)	Conservation Objectives
South Dublin Bay and River Tolka Estuary SPA (004024)	2.8km northeast of the proposed development site	› Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] › Oystercatcher (*Haematopus ostralegus*) [A130] › Ringed Plover (*Charadrius hiaticula*) [A137] › Grey Plover (*Pluvialis squatarola*) [A141] › Knot (*Calidris canutus*) [A143] › Sanderling (*Calidris alba*) [A144] › Dunlin (*Calidris alpina*) [A149] › Bar-tailed Godwit *(Limosa lapponica*) [A157] › Redshank (*Tringa totanus*) [A162] › Black-headed Gull (*Chroicocephalus ridibundus*) [A179] › Roseate Tern (*Sterna dougallii*) [A192] › Common Tern (*Sterna hirundo*) [A193] › Arctic Tern (*Sterna paradisaea*) [A194] › Wetland and Waterbirds [A999]	This site has detailed conservation objectives for each species listed as Qualifying Interests of the SPA: "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests of this SPA." This site also has a second conservation objective: "To maintain the favourable conservation condition of the wetland habitat in South Dublin Bay and River Tolka Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it." NPWS (2015) Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
North Bull Island SPA (004006)	6km to the northeast of the proposed development site	› Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] › Shelduck (*Tadorna tadorna*) [A048] › Teal (*Anas crecca*) [A052] › Pintail (*Anas acuta*) [A054] › Shoveler (*Anas clypeata*) [A056] › Oystercatcher (*Haematopus ostralegus*) [A130] › Golden Plover (*Pluvialis apricaria*) [A140] › Grey Plover (*Pluvialis squatarola*) [A141]	This site has detailed conservation objectives for each species listed as Qualifying Interests of the SPA: "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests of this SPA." This site also has a second conservation objective:

Designated site and code	Distance from proposed development (Km)	Qualifying Interests/Special Conservation Interests for which the European Site has been designated (https://www.npws.ie, last viewed 13/04/2021)	Conservation Objectives
		› Knot (*Calidris canutus*) [A143] › Sanderling (*Calidris alba*) [A144] › Dunlin (*Calidris alpina*) [A149] › Black-tailed Godwit (*Limosa limosa*) [A156] › Bar-tailed Godwit (*Limosa lapponica*) [A157] › Curlew (*Numenius arquata*) [A160] › Redshank (*Tringa totanus*) [A162] › Turnstone (*Arenaria interpres*) [A169] › Black-headed Gull (*Chroicocephalus ridibundus*) [A179] › Wetland and Waterbirds [A999]	"To maintain the favourable conservation condition of the wetland habitat in North Bull Island SPA as a resource for the regularly occurring migratory waterbirds that utilise it" NPWS (2015) Conservation Objectives: North Bull Island SPA 004006. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Wicklow Mountains SPA	7.4km south of the proposed development site	› Merlin (*Falco columbarius*) [A098] › Peregrine (*Falco peregrinus*) [A103]	This site has detailed conservation objectives for each species listed as Qualifying Interests of the SPA: "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA" Citation: NPWS (2021) Conservation objectives for Wicklow Mountains SPA [004040]. Generic Version 8.0. Department of Housing, Local Government and Heritage.
Dalkey Islands SPA (004172)	9.8km east of the proposed development site	› Roseate Tern (*Sterna dougallii*) [A192] › Common Tern (*Sterna hirundo*) [A193] › Arctic Tern (*Sterna paradisaea*) [A194]	This site has detailed conservation objectives for each species listed as Qualifying Interests of the SPA: "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA"

Designated site and code	Distance from proposed development (Km)	Qualifying Interests/Special Conservation Interests for which the European Site has been designated (https://www.npws.ie, last viewed 13/04/2021)	Conservation Objectives
			NPWS (2021) Conservation objectives for Dalkey Islands SPA [004172]. Generic Version 8.0. Department of Housing, Local Government and Heritage.
Baldoyle Bay SPA (004016)	12.9km northeast of the proposed development site	› Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] › Shelduck (*Tadorna tadorna*) [A048] › Ringed Plover (*Charadrius hiaticula*) [A137] › Golden Plover (*Pluvialis apricaria*) [A140] › Grey Plover (*Pluvialis squatarola*) [A141] › Bar-tailed Godwit (*Limosa lapponica*) [A157] › Wetland and Waterbirds [A999]	This site has detailed conservation objectives for each species listed as Qualifying Interests of the SPA: "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests of this SPA." This site also has a second conservation objective: "To maintain the favourable conservation condition of the wetland habitat in Baldoyle Bay SPA" NPWS (2013) Conservation Objectives: Baldoyle Bay SPA 004016. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Howth Head Coast SPA (004113)	14.1km northeast of the proposed development site	› Kittiwake (*Rissa tridactyla*) [A188]	This site has detailed conservation objectives for each species listed as Qualifying Interests of the SPA: "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA"

Designated site and code	Distance from proposed development (Km)	Qualifying Interests/Special Conservation Interests for which the European Site has been designated (https://www.npws.ie, last viewed 13/04/2021)	Conservation Objectives
			NPWS (2021) Conservation objectives for Howth Head Coast SPA [004113]. Generic Version 8.0. Department of Housing, Local Government and Heritage.

2.2.2 Irish Wetland Bird Survey (IWeBS) Records

The dataset for Dublin Bay (which incorporates the South Dublin Bay and Tolka River Estuary SPA) was downloaded from www.birdwatchireland.ie and reviewed. Data from this I-WeBS site has been used to estimate the population of waterbirds in the area surrounding the proposed development area. The most recent 5-season period and mean counts for this period are presented in Table 2-2.

Table 2-2 I-WeBS data for Dublin Bay

Species	2013/14	2014/15	2015/16	2016/17	2017/18	5- season mean 2013/14-2017/18:
Mute Swan	5	6	9	6	12	8
Light-bellied Brent Goose	3717	4862	4195	4420	3331	4105
Shelduck	961	2927	744	1811	1611	1611
Wigeon	691	2201	1106	1839	918	1351
Gadwall	2	2	-	-	-	1
Teal	1378	1233	1291	1654	1092	1330
Mallard	97	106	120	70	111	101
Pintail	200	150	124	190	222	177
Shoveler	126	97	115	116	144	120
Long-tailed Duck	1	-	-	2	-	1
Common Scoter	42	-	40	19	65	33
Goldeneye	-	2	1*	1	-	1
Red-breasted Merganser	60	57	69	80	53	64
Goosander	-	-	-	-	2	0
Red-throated Diver	7	2	7	6	5	5
Great Northern Diver	3	-	5	1	2	2
Little Grebe	1	5	-	4	4	3
Great Crested Grebe	755	143	307	193	60	292
Red-necked Grebe	1	-	-	-	-	0
Cormorant	198	41	71	170	199	136
Shag	36	3	71	19	22	30
Little Egret	59	69	59	71	87	69
Grey Heron	68	40	44	30	29	42
Moorhen	5		5	3	2	3
Oystercatcher	3074	3315	3588	4042	3521	3508
Ringed Plover	139	121	109	208	285	172
Golden Plover	1080	742	1155	1010	2501	1298
Grey Plover	310	452	240	245	248	299
Lapwing	52	54	143	25	32	61
Knot	4547	4950	2495	5850	6555	4879
Sanderling	510	266	841	374	800	558
Purple Sandpiper	2	1	2	-	-	1
Dunlin	5907	3603	3376	8280	7484	5730
Snipe	20	-	31	53	57	32

Species	2013/14	2014/15	2015/16	2016/17	2017/18	5- season mean 2013/14-2017/18:
Black-tailed Godwit	1768	873	2185	1274	1479	1516
Bar-tailed Godwit	1710	1658	2173	2653	1934	2026
Whimbrel	2	4	-	-	-	1
Curlew	932	1424	567	834	494	850
Spotted Redshank	1	-	3	-	-	1
Greenshank	34	47	78	35	47	48
Redshank	2460	1889	1648	1430	2274	1940
Turnstone	466	250	584	286	334	384
Mediterranean Gull	39	27	64	68	6	41
Black-headed Gull	2649	1259	2768	2731	3802	2642
Ring-billed Gull	-	-	-	1	-	0
Common Gull	985	272	890	213	321	536
Lesser Black-backed Gull	5	20	16	5	14	12
Herring Gull	490	261	538	461	607	471
Yellow-legged Gull	1	-	2	1	-	1
Iceland Gull	-	-	-	1	-	0
Glaucous Gull	-	-	-	1	-	0
Great Black-backed Gull	190	52	263	151	115	154
Sandwich Tern	52	-	8	-	9	14
Common Tern	39	-	1	2	2	9
Common/ Arctic Tern	-	-	-	105	-	21
Kingfisher	1	-	1	-	-	0

As previously discussed, data from I-WeBS sites in County Dublin has been used to estimate County populations of wintering waterbirds discussed in this report. Datasets for the following sites were downloaded from www.birdwatchireland.ie and reviewed:

Dublin IWeBS Sites

- Baldoyle Bay
- Brittas Pools
- Broadmeadow (Malahide) Estuary
- Delvin River – Hampton Cove
- Dublin Bay
- Dublin Zoo Ponds
- Grand Canal (Dublin)
- Hick's Tower and Robswall
- Hynestown Lake Naul
- Ireland's Eye
- Knock Lake
- Lambay Island
- Mountseskin/Gortlum
- Portmarnock Marsh

- Rockabill
- Rogerstown Estuary
- Seagrange Park
- Skerries Coast
- Skerries Islands
- Skerries, Baldongan
- South Dublin Coastline
- St. Stephen's Green
- Tymon Park

2.2.3 Method of Identification of Target Species

Following a comprehensive desk study by MKO, initial site visit and consultation, a list of "Target species" likely to occur at the site was compiled. The survey work carried out on the site was specifically designed to survey for these identified target species. The target species list was drawn from:

- Annex I of the Birds Directive,
- Special Conservation Interests (SCI) of Special Protection Areas (SPA) within the zone of likely significant effects,
- Red listed birds of Conservation Concern in Ireland,
- Species with the potential to be impacted by this type of development.

All species within these categories were considered as target species for the purpose of these surveys.

3. FIELD SURVEYS

3.1 Field Survey Methods

This section of the report describes the various field survey methods employed. Field surveys were undertaken from September 2020 – March 2021 inclusive. Field survey methodologies have been devised to survey for the bird species composition and assemblages that occur within the study area.

3.1.1 Initial Site Assessment

Based on the results of the desk study, the likely importance of the study area for bird species was determined. Based on the collated information available from the above preliminary assessment and adopting a precautionary approach, a site-specific scope for the ornithological surveys was developed.

3.1.2 Vantage Point Surveys

Vantage Point surveys were undertaken to determine the presence of bird species of high conservation concern within areas of potentially suitable habitat in the study area. These surveys were undertaken in the form of a vantage point watch overlooking the proposed development boundary. Due to the number of buildings within the proposed development site which partially obsecured the view, three vantage points within the development site were required to provide good coverage of all amenity grassland habitats within the proposed development site.

The survey was undertaken (onsite) over two three-hour periods[1] (morning and afternoon), which included the two hours on either side of high tide, as this is the period when birds from the nearby SPAs are most likely to make use of terrestrial habitats, such as those present within the proposed development site. The main aim of the survey was to identify if SCIs from the nearby SPAs were utilising areas onsite for foraging or roosting. Along with target species, all additional species observed were recorded to inform the evaluation of supporting habitat.

Survey effort, including details of survey duration and weather condition, is presented in Appendix 1, Table 1-1. Figure 1 in Appendix 1 shows the survey study area.

3.1.3 Walkover and Habitat Surveys

Transect routes were walked during each survey to assess the quality and composition of habitats at various points (10 maximum) within the proposed development boundary. Transect routes were devised to ensure coverage of different habitat complexes within the study area, during each survey visit. At each point grass sward height, percentage of grass, percentage of forb species and percentage of bare ground was recorded. The abundance of brent geese droppings present at each transect point was also recorded during these surveys. Results of these habitat transects are presented in Table 3-4 below.

A further consideration during the walkover was to identify signs (e.g. droppings) of bird species of high conservation concern within areas of potentially suitable habitat in the study area. The walkover survey was undertaken within the redline boundary.

The survey was undertaken (onsite) within two hours of high tide, as this is the period when birds from the nearby SPAs are most likely to make use of terrestrial habitats, such as those present within the proposed development area. The main aim of the survey was to identify if SCIs from the adjacent SPA

[1] *With the exception of the September and the first visit in October, these surveys focused on a two hour period overlapping with high/low tides.*

were utilising areas onsite for foraging or roosting. Along with target species, all additional species observed were recorded to inform the evaluation of supporting habitat.

Survey effort, including details of survey duration and weather condition, is presented in Appendix 1, Table 1-1. Figure 1 in Appendix 1 shows the survey study area.

3.1.4 Survey Justification

A comprehensive suite of bird surveys was undertaken at the site between September 2020 and March 2021, as detailed in this report.

The surveys undertaken provide the information necessary to allow a complete, comprehensive and robust assessment of the potential impacts of the proposed development on avian receptors.

3.2 Field survey results

3.2.1 Survey Effort

Surveys were undertaken between the 16th of September 2020 and the 24th of March 2021. Two visits a month were undertaken during this period, with 12 surveys carried out in total. Table 3-1 shows the survey effort for the 2020/2021 winter season.

Table 3-1 Survey Effort

Survey Date	Survey Duration	Surveyor
16/09/2020	2:00 starting at 11:00	DW
28/09/2020	2:00 starting at 09:30	DW
14/10/2020	2:00 starting at 09:15	DW
30/10/2020	6:00 starting at 09:15	DW
13/11/2020	6:00 starting at 09:30	DW
26/11/2020	6:00 starting at 09:30	DW
18/12/2020	6:45 starting at 09:00	KS
04/01/2021	6:00 starting at 09:00	KS
18/01/2021	3:00 starting at 09:00	KS
18/01/2021	3:00 starting at 13:00	KS
29/01/2021	3:00 starting at 09:00	KS
29/01/2021	3:00 starting at 13:00	KS
12/02/2021	3:00 starting at 09:00	KS
12/02/2021	3:00 starting at 13:00	KS
26/02/2021	3:00 starting at 09:00	KS
26/02/2021	3:00 starting at 13:00	KS
12/03/2021	3:00 starting at 09:00	KS
12/03/2021	3:00 starting at 13:00	KS
24/03/2021	3:00 starting at 09:00	KS
24/03/2021	3:00 starting at 13:00	KS

3.2.2 Vantage Point Survey Results

As previously discussed, surveys were undertaken at the proposed development between September 2020 and March 2021 inclusive. Summary results from the vantage point surveys are presented below in Table 3-2 and Table 3-3, and discussed in further detail in Section 4 of this report. Figure numbers refer to figures provided in Appendix 2.

Table 3-2 Total number of each species recorded commuting over the proposed development site during surveys (Peak Counts for each species are presented in bold)

Species	Conservation Status	September		October		November		December	January			February		March		Figure No.
		16th	28th	14th	30th	13th	26th	18th	4th	18th	29th	12th	26th	12th	24th	
Black-headed Gull	BoCCI Red Listed (Breeding Populations)	-	-	-	-	-	-	**505**	198	77	185	215	73	3	4	Figure 1
Brent Goose	BoCCI Amber Listed	-	-	-	-	-	-	-	-	-	-	-	-	**106**	-	Figure 2
Common Gull	BoCCI Amber Listed (Breeding Populations)	-	-	-	-	-	-	13	3	3	5	13	**16**	12	-	Figure 3
Curlew	BoCCI Red Listed	-	-	-	-	-	-	**70**	35	-	-	-	-	-	-	Figure 4
Little Egret	Annex I; BoCCI Green Listed	-	-	-	-	-	-	-	**1**	-	-	-	-	-	-	Figure 5
Great Black-backed Gull	BoCCI Amber Listed (Breeding Populations)	-	-	-	-	-	-	-	-	**1**	-	-	-	-	-	Figure 6
Herring Gull	BoCCI Red Listed (Breeding Populations)	-	-	-	-	-	-	**220**	62	190	112	55	56	78	79	Figure 7
Lesser Black-backed Gull	BoCCI Amber Listed (Breeding Populations)	-	-	-	-	-	-	-	-	-	-	3	4	7	**22**	Figure 8
Mallard	BoCCI Amber Listed	-	-	-	-	-	-	-	**6**	-	-	-	-	2	**6**	Figure 9

Table 3-3 Total number of each species recorded on, or within 500m of, the proposed development site (i.e. observed foraging/roosting) (Peak Counts for each species are presented in bold)

Species	Conservation Status	September		October		November		December	January			February		March		Figure No.
		16th	28th	14th	30th	13th	26th	18th	4th	18th	29th	12th	26th	12th	24th	
Black-headed Gull	BoCCI Red Listed (Breeding Populations)	-	-	9	5	46	23	13	36	38	15	**46**	21	-	-	Figure 1.1.1
Common Gull	BoCCI Amber Listed (Breeding Populations)	-	-	1	3	**5**	1	-	2	-	2	4	-	-	-	Figure 1.3.1

Species	Conservation Status	September		October		November		December	January			February		March		Figure No.
		16th	28th	14th	30th	13th	26th	18th	4th	18th	29th	12th	26th	12th	24th	
Curlew	BoCCI Red Listed	-	-	-	-	-	-	-	**24**	**-**	-	-	-	-	-	Figure 1.4.1
Little Egret	Annex I; BoCCI Green Listed	-	-	-	-	-	**1**	-	**-**	**-**	-	-	-	-	-	
Herring Gull	BoCCI Red Listed (Breeding Populations)	2	20	-	-	**95**	28	94	15	9	-	-	5	-	1	Figure 1.7.1
Lesser Black-backed Gull	BoCCI Amber Listed (Breeding Populations)	-	-	-	-	-	-	-	-	-	-	-	-	1	**2**	Figure 1.8.1

3.2.3 Walkover and Habitat Survey Results

Habitat quality and composition were recorded along walked transects within the proposed development were assessed at visits between November and March inclusive. The monthly range and averages of habitat compositions are detailed in Table 3-4 below. Also included are average monthly sward heights and the abundance of brent goose droppings.

Table 3-4 Habitat quality and composition of walked transects within the proposed development. Also included is the abundance of brent geese droppings observed on transects.

Month	Sward Height (cm)	Grass (%)		Forbs (%)		Bare Ground (%)		Number of Droppings
		Range	Average	Range	Average	Range	Average	
November	9.3	60-100	86	0-40	13.5	0-5	0.2	0
December	8.9	80-100	94.8	0-20	5.2	0	0	0
January	11	80-100	93.9	0-20	6	0	0	0
February	7.5	90-100	97.1	0-10	2.9	0	0	0
March	6.9	80-100	96.2	0-20	3.8	0	0	0

4. DISCUSSION

The following provides a synopsis of the findings of the surveys undertaken between September 2020 and March 2021.

Within the proposed development site and/or within 500m of the site, the following key observations were noted:

- On the 4th of January, curlew were observed using an area of amenity grassland within the proposed development site for foraging.
- Herring gull, black-head gull, lesser black-backed gull and common gull were frequently observed using the proposed development site for foraging and roosting.
- Black-headed gull and herring gull were observed regularly commuting over the proposed development.
- Curlew and brent geese were observed commuting over the proposed development site infrequently.

Key impacts that could result from the proposed development on local avian receptors include habitat loss, disturbance/displacement and water pollution.

The proposed development is currently in use as a hospital facility, with amenity grasslands regularly maintained and mown by gardeners on-site. These grasslands have a short grass sward length (6.9-11cm; see Table 3-4) which would be favourable to SCI species, however, these grasslands are frequently accessed for recreational use leading to a high level of disturbance. Curlew were observed twice on an amenity grassland used as a walking area/football pitch within the proposed development, however, the flocks were flushed due to disturbance on both occasions.

Of the SCI species listed for the SPAs within the ZOI, black-headed gull, brent goose and curlew were observed on, or within 500m of, the proposed development site. There were no flocks of county importance observed roosting or foraging within the proposed development site for any of these species (see Table 3-3).

Black-headed gull flocks of county importance (>90 birds; 1% of the county population) were observed on one occasion commuting over the proposed development site. Brent goose flocks of county importance (>84 birds; 1% of the county population) were observed on one occasion commuting over the proposed development site and curlew flocks of county importance (>29 birds; 1% of the county population) were observed on two occasions commuting over the proposed development site. Flocks of importance relative to the local population (1% of the Dublin Bay I-WeBS site population) were recorded for black-headed gull on fifteen occasions, brent goose on one occasion and curlew on four occasions.

The potential for birds commuting over the site to be impacted by construction activities is considered to be limited. There is the potential for disturbance/displacement and habitat loss for species observed utilising habitats within the proposed development site during the construction phase. If impacts are assessed to be significant, the likelihood is that disturbance/displacement impacts can be avoided or reduced by imposing suitable mitigation measures. Such mitigation could include limiting construction activities to the summer when wintering birds are not present.

5. CONCLUSION

There are six SPAs within the ZOI, the nearest SPA to the proposed development is South Dublin Bay and River Tolka Estuary SPA (2.8km to the northeast). Of the SCI species listed for the SPAs within the ZOI, black-headed gull, brent goose and curlew were the only species recorded commuting or foraging on, or within 500m of, the proposed development.

The proposed development site is not within a SPA, however, given the proximity of several SPAs, there may be potential for impacts to result during construction and operational phases of the proposed development on birds that are associated with these SPAs. Potential impacts could include:

- Loss of potential foraging/roosting habitat within the proposed development site.
- Disturbance/displacement during construction works and the operational phase, including through movement of machinery, personnel, noise, vibration and/or noise associated with domestic dwellings.
- Water pollution of downstream SPAs.

The maximum likely distance at which disturbance will impact SCIs from a SPA is 300m (Cutts et al., 2013) from the proposed development boundary. Given the separation distance from the SPAs, disturbance impacts within SPAs are not anticipated. However, given the level of activity of black-headed gull at the development site, disturbance/displacement and habitat loss impacts during the construction phase cannot be ruled out. The peak number of black-headed gull observed foraging within the proposed development were not of county importance for this species, therefore it is unlikely that disturbance to this species will be ecologically significant. It is unlikely that there will be any significant disturbance/displacement of curlew in the proposed development site, given the lack of evidence that the site is used with any regularity. Brent geese were not observed foraging or roosting within the proposed development (Table 3-3) nor was there any evidence of geese on the proposed development (Table 3-4). Therefore significant disturbance/displacement of brent geese are not anticipated at the proposed development site.

When built, the proposed housing scheme may result in disturbance of SCIs of the SPAs within the likely ZOI of the proposed development site. However, habituation will likely occur to this new source of disturbance given that the SCIs of the SPA are already accustomed to the disturbance associated with Dundrum town and existing surrounding housing developments.

A wide range of environmental factors are required to support water bird species including good water quality and clarity and a good supply of food resources. Thus, water quality impacts resulting from the proposed development (i.e. during the construction and operational phases) could result in a reduction in the availability of suitable habitat for water bird species at downstream wetland sites. The effect of such a reduction in water quality has the potential to be ecologically significant. However, it is likely that best practice design and mitigation can be implemented that would avoid or reduce such impacts.

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APPENDIX 1

TECHNICAL APPENDIX

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Table 1 Survey Effort

Date	Duration (hrs)	Weather Conditions	Comments	Surveyor
16/09/2020	2:00 starting at 11:00	Visibility: good; Wind speed and direction: light breeze SW; Cloud cover and height: 0% >500m; Rain: none; Frost: none; Snow: none	High tide 12:30	DW
28/09/2020	2:00 starting at 09:30	Visibility: good; Wind speed and direction: light breeze W; Cloud cover and height: 100% 150-500m; Rain: drizzle; Frost: none; Snow: none	High tide 10:30	DW
14/10/2020	2:00 starting at 09:15	Visibility: good; Wind speed and direction: gentle breeze W; Cloud cover and height: 66% 150-500m; Rain: none; Frost: none; Snow: none	High tide 10:30	DW
30/10/2020	6:00 starting at 09:15	Visibility: good; Wind speed and direction: gentle breeze E; Cloud cover and height: 33% >500m; Rain: none; Frost: none; Snow: none		DW
13/11/2020	6:00 starting at 09:30	Visibility: good; Wind speed and direction: fresh breeze S; Cloud cover and height: 66% 150-500m; Rain: none; Frost: none; Snow: none	Sunny during morning, cloudy in afternoon	DW
26/11/2020	6:00 starting at 09:30	Visibility: good; Wind speed and direction: moderate breeze S; Cloud cover and height: 100% >500m; Rain: none; Frost: none; Snow: none		DW
18/12/2020	6:45 starting at 09:00	Visibility: moderate; Wind speed and direction: gentle breeze NNE; Cloud cover and height: 90% 150-500m; Rain: light showers; Frost: none; Snow: none	45minute break at 12:00	KS
04/01/2021	7:00 starting at 09:00	Visibility: moderate; Wind speed and direction: light breeze SW; Cloud cover and height: 75% 150-500m; Rain: light showers; Frost: none; Snow: none	Hour long break at 12:00	KS
18/01/2021	3:00 starting at 09:00	Visibility: moderate; Wind speed and direction: gentle breeze NE; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none		KS
18/01/2021	3:00 starting at 13:00	Visibility: moderate; Wind speed and direction: gentle breeze NE; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none		KS
29/01/2021	3:00 starting at 09:00	Visibility: moderate; Wind speed and direction: gentle breeze SW; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		KS
29/01/2021	3:00 starting at 13:00	Visibility: moderate; Wind speed and direction: gentle breeze SW; Cloud cover and height: 66-100% 150-500m; Rain: drizzle; Frost: none; Snow: none		KS
12/02/2021	3:00 starting at 09:00	Visibility: good; Wind speed and direction: moderate breeze NW; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none		KS
12/02/2021	3:00 starting at 13:00	Visibility: good; Wind speed and direction: moderate breeze NW; Cloud cover and height: 33-66% 150-500m; Rain: none; Frost: none; Snow: none		KS
26/02/2021	3:00 starting at 09:00	Visibility: good; Wind speed and direction: light breeze N; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		KS
26/02/2021	3:00 starting at 13:00	Visibility: good; Wind speed and direction: light breeze N; Cloud cover and height: 33-66% >500m; Rain: none; Frost: none; Snow: none		KS

Date	Duration (hrs)	Weather Conditions	Comments	Surveyor
12/03/2021	3:00 starting at 09:00	Visibility: good; Wind speed and direction: light breeze N; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none	Sunny	KS
12/03/2021	3:00 starting at 13:00	Visibility: good; Wind speed and direction: light breeze N; Cloud cover and height: 0-33% >500m; Rain: none; Frost: none; Snow: none	Sunny	KS
24/03/2021	3:00 starting at 09:00	Visibility: good; Wind speed and direction: moderate breeze N; Cloud cover and height: 33-66% >500m; Rain: drizzle; Frost: light; Snow: none	Some showers of rain and hail	KS
24/03/2021	3:00 starting at 13:00	Visibility: good; Wind speed and direction: moderate breeze N; Cloud cover and height: 33-66% >500m; Rain: drizzle; Frost: light; Snow: none	Some showers of rain and hail	KS

Table 2 Winter Bird Survey Flock Data

Map ref.	Date	Time	Flock composition	Habitat and activity	Surveyor
	30/10/2020	10:15	1 Black-headed Gull and 1 Common Gull		DW
	30/10/2020	11:55	4 Black-headed Gull and 2 Common Gull		DW
	13/11/2020	09:52	5 Herring Gull, 8 Black-headed Gull and 2 Common Gull		DW
	13/11/2020	09:52	1 Herring Gull and 4 Black-headed Gull		DW
	13/11/2020	10:25	64 Herring Gull and 10 Black-headed Gull		DW
	13/11/2020	11:02	1 Herring Gull		DW
	13/11/2020	11:40	6 Black-headed Gull and 1 Common Gull		DW
	13/11/2020	11:40	6 Black-headed Gull		DW
	13/11/2020	12:15	24 Herring Gull and 3 Black-headed Gull		DW
	13/11/2020	13:37	6 Black-headed Gull and 2 Common Gull		DW
	13/11/2020	13:37	3 Black-headed Gull		DW
	26/11/2020	09:30	6 Herring Gull and 4 Black-headed Gull		DW
	26/11/2020	10:26	16 Black-headed Gull and 1 Common Gull		DW
	26/11/2020	11:00	6 Herring Gull		DW
	26/11/2020	11:33	1 Little Egret		DW
	26/11/2020	12:06	3 Black-headed Gull		DW
	26/11/2020	12:40	16 Herring Gull		DW
	16/09/2020	11:30	1 Herring Gull	amenity grassland (improved); flyover	DW
	16/09/2020	12:01	1 Herring Gull	amenity grassland (improved); flyover	DW
HG001	28/09/2020	09:30	19 Herring Gull	amenity grassland (improved); on ground, mixed-age flock	DW
	28/09/2020	09:35	1 Herring Gull	amenity grassland (improved); flyover	DW
BH001	14/10/2020	12:00	9 Black-headed Gull	amenity grassland (improved); roosting	DW
CM001	14/10/2020	12:00	1 Common Gull	amenity grassland (improved); feeding	DW
BH002	18/12/2020	09:42	13 Black-headed Gull		KS
HG002	18/12/2020	11:43	38 Herring Gull		KS
HG003	18/12/2020	12:53	56 Herring Gull		KS

Map ref.	Date	Time	Flock composition	Habitat and activity	Surveyor
BH003/HG004	04/01/2021	09:05	15 Herring Gull and 15 Black-headed Gull		KS
BH004/CM002/CU001	04/01/2021	09:11	16 Curlew, 14 Black-headed Gull and 1 Common Gull		KS
BH005/CM003/CU002	04/01/2021	10:31	8 Curlew, 7 Black-headed Gull and 1 Common Gull		KS
BH006/HG005	18/01/2021	09:07	20 Black-headed Gull and 5 Herring Gull	amenity grassland (improved); terrestrial, birds feeding on pitch	KS
BH007/HG006	18/01/2021	10:36	18 Black-headed Gull and 4 Herring Gull	amenity grassland (improved); terrestrial, birds feeding on pitch	KS
BH008/CM004	29/01/2021	09:54	9 Black-headed Gull and 2 Common Gull	amenity grassland (improved); terrestrial, feeding on pitch	KS
BH009	29/01/2021	13:03	6 Black-headed Gull	amenity grassland (improved); terrestrial, feeding on pitch	KS
BH010/CM004	12/02/2021	09:07	29 Black-headed Gull and 4 Common Gull	amenity grassland (improved); t/feeding	KS
BH011	12/02/2021	11:18	17 Black-headed Gull	amenity grassland (improved); t/feeding	KS
BH012/HG007	26/02/2021	09:16	16 Black-headed Gull and 5 Herring Gull	amenity grassland (improved); t/feeding	KS
BH013	26/02/2021	10:36	5 Black-headed Gull	amenity grassland (improved); terrestrial	KS
LB001	12/03/2021	09:26	1 Lesser Black-backed Gull	built land; perched on building roof	KS
HG008	26/03/2021	09:21	1 Herring Gull	amenity grassland (improved); foraging	KS
LB002	26/03/2021	15:59	2 Lesser Black-backed Gull	amenity grassland (improved); foraging	KS

Table 3 Winter Bird Survey Flight Data

Map Ref.	Date	Time	Species	Number of birds	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-20m)	Band 3 (20-30m)	Band 4 (>30m)	Habitat and activity	Surveyor
BH001	18/12/2020	09:29	Black-headed Gull	13	10		10			amenity grassland (improved); flying	KS
CM001	18/12/2020	09:32	Common Gull	5	10	10				amenity grassland (improved); flying	KS
	18/12/2020	09:42	Black-headed Gull	13						amenity grassland (improved); terrestrial, feeding	KS
HG001	18/12/2020	10:09	Herring Gull	30	10		10			amenity grassland (improved); flying	KS
BH002	18/12/2020	10:20	Black-headed Gull	4	10	10				amenity grassland (improved); flying	KS
BH003	18/12/2020	10:30	Black-headed Gull	20	10	10				amenity grassland (improved); flying	KS
	18/12/2020	10:40	Herring Gull	10	10	10				built land; flying	KS
BH004	18/12/2020	10:53	Black-headed Gull	6	10		10			amenity grassland (improved); flying	KS
BH005	18/12/2020	10:57	Black-headed Gull	12	40		40			amenity grassland (improved); flying	KS
CM002	18/12/2020	11:13	Common Gull	8	15					amenity grassland (improved); flying	KS
	18/12/2020	11:18	Herring Gull	25	10	10				built land; flying	KS
BH006	18/12/2020	11:22	Black-headed Gull	35	70		70			amenity grassland (improved); flying	KS
HG002	18/12/2020	11:43	Herring Gull	38						amenity grassland (improved); terrestrial, feeding	KS
HG003	18/12/2020	12:53	Herring Gull	56						amenity grassland (improved); terrestrial, feeding	KS
BH007	18/12/2020	13:01	Black-headed Gull	12	15	15				amenity grassland (improved); flying	KS
HG004	18/12/2020	13:04	Herring Gull	4	20		20			built land; flying	KS
BH008	18/12/2020	13:09	Black-headed Gull	8	10	10				amenity grassland (improved); flying	KS
BH009	18/12/2020	13:16	Black-headed Gull	3	10		10			built land; flying	KS

Map Ref.	Date	Time	Species	Number of birds	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-20m)	Band 3 (20-30m)	Band 4 (>30m)	Habitat and activity	Surveyor
BH010	18/12/2020	13:23	Black-headed Gull	4	8	8				amenity grassland (improved); flying	KS
BH011	18/12/2020	13:46	Black-headed Gull	5	10			10		amenity grassland (improved); flying	KS
BH012	18/12/2020	13:53	Black-headed Gull	7	10		10			amenity grassland (improved); flying	KS
CU001	18/12/2020	14:03	Curlew	70	25			25		built land; flying	KS
BH013	18/12/2020	14:19	Black-headed Gull	46	60			60		amenity grassland (improved); flying	KS
HG005	18/12/2020	14:38	Herring Gull	15	5	5				amenity grassland (improved); flying	KS
BH014	18/12/2020	14:44	Black-headed Gull	75	100		100			amenity grassland (improved); flying	KS
HG006	18/12/2020	14:56	Herring Gull	14	20			20		amenity grassland (improved); flying	KS
HG007	18/12/2020	15:12	Herring Gull	28	60		60			amenity grassland (improved) and built land; flying	KS
BH015	18/12/2020	15:23	Black-headed Gull	9	20				20	built land; flying	KS
BH016	18/12/2020	15:27	Black-headed Gull	13	20		20			amenity grassland (improved); flying	KS
BH017	18/12/2020	15:32	Black-headed Gull	22	60				60	built land; flying	KS
BH018	18/12/2020	15:37	Black-headed Gull	31	20			20		amenity grassland (improved); flying	KS
BH019	18/12/2020	15:41	Black-headed Gull	60	30				30	built land; flying	KS
BH020	18/12/2020	15:43	Black-headed Gull	47	50			50		built land; flying	KS
BH021	18/12/2020	15:45	Black-headed Gull	60	10		10			amenity grassland (improved); flying	KS
CU002	04/01/2021	09:28	Curlew	1	20			20		amenity grassland (improved); flying	KS
HG008	04/01/2021	09:44	Herring Gull	10	60		60			built land; flying	KS
CU003	04/01/2021	09:57	Curlew	3	10		10			amenity grassland (improved); flying	KS

Map Ref.	Date	Time	Species	Number of birds	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-20m)	Band 3 (20-30m)	Band 4 (>30m)	Habitat and activity	Surveyor
ET001	04/01/2021	10:11	Little Egret	1	5	5				amenity grassland (improved); flying	KS
	04/01/2021									; flying	KS
CU004	04/01/2021	10:34	Curlew	1	15			15		amenity grassland (improved) and built land; flying	KS
CU005	04/01/2021	11:47	Curlew	30	15		15			amenity grassland (improved); flying	KS
MA001	04/01/2021	13:25	Mallard	3	5	5				watercourses; flying	KS
HG009	04/01/2021	14:11	Herring Gull	12	60	60				amenity grassland (improved) and built land; flying	KS
CM003	04/01/2021	14:18	Common Gull	3	10	10				built land; flying	KS
MA002	04/01/2021	14:54	Mallard	3	5	5				amenity grassland (improved); flying	KS
BH022	04/01/2021	15:03	Black-headed Gull	20	20	20				amenity grassland (improved); flying	KS
BH023	04/01/2021	15:33	Black-headed Gull	20	30	30				amenity grassland (improved); flying	KS
HG010	04/01/2021	15:33	Herring Gull	20	30	30	30			amenity grassland (improved); flying	KS
BH024	04/01/2021	15:40	Black-headed Gull	18	20	20				amenity grassland (improved); flying	KS
BH025	04/01/2021	15:45	Black-headed Gull	20	15	15				amenity grassland (improved); flying	KS
HG011	04/01/2021	15:47	Herring Gull	20	10	10				amenity grassland (improved); flying	KS
BH026	04/01/2021	15:51	Black-headed Gull	120	100			100		built land; flying	KS
HG012	18/01/2021	09:17	Herring Gull	1	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
BH027	18/01/2021	09:26	Black-headed Gull	6	15	15	0	0	0	built land and amenity grassland (improved); flying	KS
	18/01/2021	09:30	Great Black-backed Gull	1	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
HG013	18/01/2021	09:44	Herring Gull	18	30	0	30	0	0	built land; flying	KS
BH028	18/01/2021	10:30	Black-headed Gull	5	10	10	0	0	0	built land and amenity grassland (improved); flying	KS

Map Ref.	Date	Time	Species	Number of birds	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-20m)	Band 3 (20-30m)	Band 4 (>30m)	Habitat and activity	Surveyor
BH029	18/01/2021	10:34	Black-headed Gull	26	10	10	0	0	0	amenity grassland (improved) and built land; flying	KS
HG014	18/01/2021	11:01	Herring Gull	13	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
HG015	18/01/2021	11:10	Herring Gull	15	30	30	0	0	0	built land; flying	KS
HG016	18/01/2021	11:15	Herring Gull	7	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
HG017	18/01/2021	11:23	Herring Gull	12	20	20	0	0	0	built land; flying	KS
HG018	18/01/2021	11:36	Herring Gull	50	40	40	0	0	0	built land; flying	KS
BH030	18/01/2021	13:22	Black-headed Gull	6	10	0	10	0	0	built land and amenity grassland (improved); flying	KS
HG019	18/01/2021	13:24	Herring Gull	28	30	30	0	0	0	built land and amenity grassland (improved); flying	KS
BH031	18/01/2021	13:46	Black-headed Gull	7	10	0	10	0	0	built land and amenity grassland (improved); flying	KS
HG020	18/01/2021	14:24	Herring Gull	6	15	15	0	0	0	built land and amenity grassland (improved); flying	KS
BH032	18/01/2021	14:26	Black-headed Gull	4	20	0	0	0	20	built land; flying	KS
HG021	18/01/2021	15:16	Herring Gull	25	60	0	60	0	0	amenity grassland (improved); flying	KS
BH033	18/01/2021	15:20	Black-headed Gull	7	10	10	0	0	0	amenity grassland (improved) and built land; flying	KS
HG022	18/01/2021	15:32	Herring Gull	8	20	0	20	0	0	built land and amenity grassland (improved); flying	KS
CM004	18/01/2021	15:34	Common Gull	3	30	0	0	30	0	built land and amenity grassland (improved); flying	KS
HG023	18/01/2021	15:36	Herring Gull	7	25	25	0	0	0	built land and amenity grassland (improved); flying	KS
BH034	18/01/2021	15:39	Black-headed Gull	16	10	0	0	0	10	built land and amenity grassland (improved); flying	KS
HG024	29/01/2021	09:00	Herring Gull	3	10	10	0	0	0	built land; flying	KS
BH035	29/01/2021	09:06	Black-headed Gull	2	10	10	0	0	0	built land and amenity grassland (improved); flying	KS

Map Ref.	Date	Time	Species	Number of birds	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-20m)	Band 3 (20-30m)	Band 4 (>30m)	Habitat and activity	Surveyor
BH036	29/01/2021	09:07	Black-headed Gull	6	10	10	0	0	0	amenity grassland (improved); flying	KS
BH037	29/01/2021	09:13	Black-headed Gull	10	20	0	20	0	0	built land and amenity grassland (improved); flying	KS
BH038	29/01/2021	09:15	Black-headed Gull	6	60	0	0	60	0	amenity grassland (improved) and built land; flying	KS
HG025	29/01/2021	09:23	Herring Gull	9	10	0	10	0	0	amenity grassland (improved) and built land; flying	KS
CM005	29/01/2021	09:29	Common Gull	2	10	10	0	0	0	amenity grassland (improved) and built land; flying	KS
BH039	29/01/2021	09:41	Black-headed Gull	12	40	40	0	0	0	built land; flying	KS
HG026	29/01/2021	09:48	Herring Gull	8	20	20	0	0	0	built land; flying	KS
BH040	29/01/2021	10:05	Black-headed Gull	41	10	10	0	0	0	amenity grassland (improved); flying	KS
BH041	29/01/2021	10:17	Black-headed Gull	8	5	5	0	0	0	amenity grassland (improved); flying	KS
BH042	29/01/2021	10:26	Black-headed Gull	33	15	15	0	0	0	amenity grassland (improved) and built land; flying	KS
HG027	29/01/2021	10:37	Herring Gull	22	25	25	0	0	0	built land; flying	KS
HG028	29/01/2021	10:47	Herring Gull	4	15	15	0	0	0	built land; flying	KS
HG029	29/01/2021	11:09	Herring Gull	8	10	10	0	0	0	amenity grassland (improved) and built land; flying	KS
BH043	29/01/2021	13:20	Black-headed Gull	14	10	10	0	0	0	built land; flying	KS
HG030	29/01/2021	13:30	Herring Gull	19	15	15	0	0	0	built land; flying	KS
BH044	29/01/2021	11:00	Black-headed Gull	8	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
HG031	29/01/2021	14:11	Herring Gull	10	30	0	0	0	30	built land; flying	KS
HG032	29/01/2021	14:41	Herring Gull	3	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
HG033	29/01/2021	14:45	Herring Gull	9	15	15	0	0	0	amenity grassland (improved) and built land; flying	KS

Map Ref.	Date	Time	Species	Number of birds	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-20m)	Band 3 (20-30m)	Band 4 (>30m)	Habitat and activity	Surveyor
BH045	29/01/2021	14:45	Black-headed Gull	8	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
HG034	29/01/2021	15:02	Herring Gull	2	5	5	0	0	0	amenity grassland (improved) and built land; flying	KS
CM006	29/01/2021	15:20	Common Gull	3	10	0	10	0	0	built land; flying	KS
BH046	29/01/2021	15:25	Black-headed Gull	3	15	15	0	0	0	built land and amenity grassland (improved); flying	KS
HG035	29/01/2021	15:24	Herring Gull	7	20	20	0	0	0	built land; flying	KS
BH047	29/01/2021	15:25	Black-headed Gull	7	10	10	0	0	0	built land; flying	KS
HG036	29/01/2021	15:29	Herring Gull	8	10	10	0	0	0	built land; flying	KS
BH048	29/01/2021	15:30	Black-headed Gull	27	30	0	0	0	30	built land and amenity grassland (improved); flying	KS
HG037	12/02/2021	09:21	Herring Gull	4	15	15	0	0	0	built land; flying	KS
CM007	12/02/2021	09:26	Common Gull	2	60	0	60	0	0	built land and amenity grassland (improved); flying	KS
BH049	12/02/2021	09:28	Black-headed Gull	8	40	0	40	0	0	built land; flying	KS
LB001	12/02/2021	09:36	Lesser Black-backed Gull	1	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
LB002	12/02/2021	09:40	Lesser Black-backed Gull	1	12	12	0	0	0	built land; flying	KS
CM008	12/02/2021	09:42	Common Gull	7	15	0	15	0	0	built land and amenity grassland (improved); flying	KS
LB003	12/02/2021	09:57	Lesser Black-backed Gull	1	40	40	0	0	0	built land and amenity grassland (improved); flying	KS
BH050	12/02/2021	10:13	Black-headed Gull	14	10	10	0	0	0	amenity grassland (improved) and built land; flying	KS
BH051	12/02/2021	10:42	Black-headed Gull	4	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
HG038	12/02/2021	10:42	Herring Gull	6	15	15	0	0	0		KS
BH052	12/02/2021	10:48	Black-headed Gull	8	20	0	20	0	0	built land and amenity grassland (improved); flying	KS

Map Ref.	Date	Time	Species	Number of birds	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-20m)	Band 3 (20-30m)	Band 4 (>30m)	Habitat and activity	Surveyor
HG039	12/02/2021	10:51	Herring Gull	19	20	0	20	0	0	built land; flying	KS
CM009	12/02/2021	11:01	Common Gull	4	20	20	0	0	0	built land and amenity grassland (improved); flying	KS
BH053	12/02/2021	11:18	Black-headed Gull	17	15	15	0	0	0	amenity grassland (improved); flying, landed	KS
BH054	12/02/2021	11:23	Black-headed Gull	17	10	10	0	0	0	amenity grassland (improved); flying	KS
HG040	12/02/2021	13:21	Herring Gull	8	30	0	30	0	0	built land and amenity grassland (improved); flying	KS
HG041	12/02/2021	13:24	Herring Gull	6	20	0	0	0	20	built land and amenity grassland (improved); flying	KS
BH055	12/02/2021	13:25	Black-headed Gull	12	40	40	0	0	0	amenity grassland (improved) and built land; flying	KS
BH056	12/02/2021	13:34	Black-headed Gull	32	10	10	0	0	0	amenity grassland (improved) and built land; flying	KS
HG042	12/02/2021	13:35	Herring Gull	6	20	0	0	20	0	built land and amenity grassland (improved); flying	KS
HG043	12/02/2021	14:20	Herring Gull	6	20	0	0	20	0	built land; flying	KS
BH057	12/02/2021	14:51	Black-headed Gull	2	20	0	0	0	20	built land; flying	KS
BH058	12/02/2021	14:38	Black-headed Gull	12	10	0	10	0	0	built land and amenity grassland (improved); flying	KS
BH059	12/02/2021	15:01	Black-headed Gull	4	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
BH060	12/02/2021	15:03	Black-headed Gull	11	30	30	0	0	0	built land and amenity grassland (improved); flying	KS
BH061	12/02/2021	15:07	Black-headed Gull	17	40	0	0	40	0	built land; flying	KS
BH062	12/02/2021	15:15	Black-headed Gull	17	20	20	0	0	0	built land and amenity grassland (improved); flying	KS
BH063	12/02/2021	15:22	Black-headed Gull	10	20	0	20	0	0	built land; flying	KS

Map Ref.	Date	Time	Species	Number of birds	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-20m)	Band 3 (20-30m)	Band 4 (>30m)	Habitat and activity	Surveyor
BH064	12/02/2021	15:30	Black-headed Gull	30	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
BH065	26/02/2021	09:20	Black-headed Gull	1	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
CM010	26/02/2021	09:21	Common Gull	2	20	0	20	0	0	built land; flying	KS
BH066	26/02/2021	09:29	Black-headed Gull	1	10	10	0	0	0	amenity grassland (improved) and built land; flying	KS
HG044	26/02/2021	09:29	Herring Gull	4	30	30	0	0	0	built land and amenity grassland (improved); flying	KS
LB004	26/02/2021	09:31	Lesser Black-backed Gull	1	15	0	15	0	0	built land; flying	KS
CM011	26/02/2021	09:34	Common Gull	2	15	0	15	0	0	built land; flying	KS
HG045	26/02/2021	09:37	Herring Gull	1	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
HG046	26/02/2021	09:38	Herring Gull	1	10	0	10	0	0	amenity grassland (improved) and built land; flying	KS
BH067	26/02/2021	09:41	Black-headed Gull	3	25	0	0	25	0	built land and amenity grassland (improved); flying	KS
HG047	26/02/2021	09:47	Herring Gull	3	40	0	0	40	0	built land; flying	KS
BH068	26/02/2021	09:52	Black-headed Gull	5	20	0	20	0	0	built land and amenity grassland (improved); flying	KS
CM012	26/02/2021	10:04	Common Gull	2	10	0	0	10	0	built land and amenity grassland (improved); flying	KS
HG048	26/02/2021	10:29	Herring Gull	18	30	30	0	0	0	amenity grassland (improved); flying	KS
BH069	26/02/2021	10:31	Black-headed Gull	4	15	15	0	0	0	built land and amenity grassland (improved); flying	KS
HG049	26/02/2021	10:32	Herring Gull	1	10	10	0	0	0	amenity grassland (improved) and built land; flying	KS
BH070	26/02/2021	10:36	Black-headed Gull	5	5	5	0	0	0	amenity grassland (improved); flying, landed	KS
BH071	26/02/2021	10:39	Black-headed Gull	19	30	30	0	0	0	built land and amenity grassland (improved); flying	KS

Map Ref.	Date	Time	Species	Number of birds	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-20m)	Band 3 (20-30m)	Band 4 (>30m)	Habitat and activity	Surveyor
CM013	26/02/2021	10:39	Common Gull	6	30	30	0	0	0	built land and amenity grassland (improved); flying	KS
HG050	26/02/2021	10:45	Herring Gull	1	35	0	35	0	0	built land; flying	KS
BH072	26/02/2021	10:51	Black-headed Gull	3	10	10	0	0	0	amenity grassland (improved) and built land; flying	KS
BH073	26/02/2021	11:14	Black-headed Gull	1	20	0	20	0	0	built land; flying	KS
HG051	26/02/2021	11:15	Herring Gull	4	30	0	30	0	0	built land; flying	KS
CM014	26/02/2021	11:19	Common Gull	4	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
HG052	26/02/2021	11:26	Herring Gull	3	15	15	0	0	0	amenity grassland (improved) and built land; flying	KS
HG053	26/02/2021	11:30	Herring Gull	3	20	0	20	0	0	built land and amenity grassland (improved); flying	KS
BH074	26/02/2021	13:04	Black-headed Gull	4	10	10	0	0	0	amenity grassland (improved) and built land; flying	KS
BH075	26/02/2021	13:11	Black-headed Gull	9	10	0	10	0	0	amenity grassland (improved) and built land; flying	KS
BH076	26/02/2021	13:22	Black-headed Gull	1	15	15	0	0	0	built land and amenity grassland (improved); flying	KS
LB005	26/02/2021	13:26	Lesser Black-backed Gull	1	20	20	0	0	0	built land; flying	KS
HG054	26/02/2021	13:26	Herring Gull	6	40	40	0	0	0	built land; flying	KS
LB006	26/02/2021	13:26	Lesser Black-backed Gull	1	20	0	20	0	0	built land; flying	KS
BH077	26/02/2021	13:35	Black-headed Gull	1	10	0	10	0	0	built land and amenity grassland (improved); flying	KS
HG055	26/02/2021	13:51	Herring Gull	1	15	15	0	0	0	built land and amenity grassland (improved); flying	KS
BH078	26/02/2021	14:12	Black-headed Gull	5	20	0	20	0	0	built land and amenity grassland (improved); flying	KS
BH079	26/02/2021	14:21	Black-headed Gull	4	30	30	0	0	0	amenity grassland (improved) and built land; flying	KS

Map Ref.	Date	Time	Species	Number of birds	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-20m)	Band 3 (20-30m)	Band 4 (>30m)	Habitat and activity	Surveyor
BH080	26/02/2021	14:41	Black-headed Gull	3	20	0	0	20	0	built land and amenity grassland (improved); flying	KS
LB007	26/02/2021	14:51	Lesser Black-backed Gull	1	15	15	0	0	0	built land and amenity grassland (improved); flying	KS
BH081	26/02/2021	15:02	Black-headed Gull	2	10	0	10	0	0	built land and amenity grassland (improved); flying	KS
HG056	26/02/2021	15:07	Herring Gull	1	20	20	0	0	0	built land and amenity grassland (improved); flying	KS
HG057	26/02/2021	15:18	Herring Gull	4	30	0	30	0	0	built land; flying	KS
HG058	26/02/2021	15:23	Herring Gull	3	25	25	0	0	0	built land and amenity grassland (improved); flying	KS
HG059	26/02/2021	15:39	Herring Gull	1	15	15	0	0	0	built land and amenity grassland (improved); flying	KS
HG060	26/02/2021	15:46	Herring Gull	1	15	15	0	0	0	amenity grassland (improved) and built land; flying	KS
BH082	26/02/2021	15:52	Black-headed Gull	2	10	0	10	0	0	amenity grassland (improved) and built land; flying	KS
HG061	12/03/2021	09:13	Herring Gull	11	40	40	0	0	0	built land; flying	KS
HG062	12/03/2021	09:17	Herring Gull	8	30	30	0	0	0	built land; circling over buildings	KS
BH083	12/03/2021	09:17	Black-headed Gull	2	30	30	0	0	0	built land; circling over buildings	KS
HG063	12/03/2021	09:42	Herring Gull	2	15	15	0	0	0	built land; flying	KS
BH084	12/03/2021	09:43	Black-headed Gull	1	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
LB008	12/03/2021	09:45	Lesser Black-backed Gull	1	15	15	0	0	0	built land; flying	KS
MA003	12/03/2021	09:49	Mallard	2	20	20	0	0	0	built land and amenity grassland (improved); flying, flying back and forth	KS
CM015	12/03/2021	09:56	Common Gull	6	15	15	0	0	0	built land and amenity grassland (improved); flying	KS
HG064	12/03/2021	10:03	Herring Gull	7	30	0	30	0	0	built land; flew to building and circled	KS
	12/03/2021	10:05	Brent Goose	106	25	0	0	25	0	built land and amenity grassland (improved); flock travelling over site se	KS

Map Ref.	Date	Time	Species	Number of birds	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-20m)	Band 3 (20-30m)	Band 4 (>30m)	Habitat and activity	Surveyor
HG065	12/03/2021	10:32	Herring Gull	2	15	15	0	0	0	built land and amenity grassland (improved); flying	KS
LB009	12/03/2021	10:47	Lesser Black-backed Gull	3	20	0	20	0	0	built land and amenity grassland (improved); flying	KS
HG066	12/03/2021	10:48	Herring Gull	4	30	30	0	0	0	built land; flying	KS
HG067	12/03/2021	11:04	Herring Gull	2	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
HG068	12/03/2021	11:14	Herring Gull	7	15	0	15	0	0	built land and amenity grassland (improved); flying	KS
CM016	12/03/2021	12:42	Common Gull	8	20	20	0	0	0	built land and amenity grassland (improved); flying	KS
HG069	12/03/2021	11:28	Herring Gull	3	20	0	0	20	0	built land and amenity grassland (improved); circling	KS
HG070	12/03/2021	11:29	Herring Gull	4	30	30	0	0	0	built land; flying	KS
LB010	12/03/2021	11:54	Lesser Black-backed Gull	1	10	10	0	0	0	built land; flying	KS
HG071	12/03/2021	13:14	Herring Gull	6	15	15	0	0	0	built land and amenity grassland (improved); flying	KS
LB011	12/03/2021	13:25	Lesser Black-backed Gull	1	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
CM017	12/03/2021	13:31	Common Gull	3	15	15	0	0	0	built land and amenity grassland (improved); flying	KS
LB012	12/03/2021	13:34	Lesser Black-backed Gull	1	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
HG072	12/03/2021	13:34	Herring Gull	12	30	30	0	0	0	built land; flying	KS
HG073	12/03/2021	14:51	Herring Gull	2	30	30	0	0	0	built land and amenity grassland (improved); flying	KS
HG074	12/03/2021	15:09	Herring Gull	3	40	0	40	0	0	built land; flying	KS
HG075	12/03/2021	15:46	Herring Gull	3	20	20	0	0	0	built land; flying	KS
HG076	12/03/2021	15:49	Herring Gull	2	20	0	20	0	0	built land and amenity grassland (improved); flying	KS
CM018	12/03/2021	15:52	Common Gull	3	15	0	15	0	0	built land and amenity grassland (improved); flying	KS

Map Ref.	Date	Time	Species	Number of birds	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-20m)	Band 3 (20-30m)	Band 4 (>30m)	Habitat and activity	Surveyor
HG077	26/03/2021	09:06	Herring Gull	2	15	15	0	0	0	built land and amenity grassland (improved); flying	KS
HG078	26/03/2021	09:11	Herring Gull	5	35	0	35	0	0	built land and amenity grassland (improved); flying	KS
HG079	26/03/2021	09:11	Herring Gull	2	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
HG080	26/03/2021	09:21	Herring Gull	6	15	15	0	0	0	amenity grassland (improved) and built land; flying	KS
HG081	26/03/2021	09:28	Herring Gull	1	10	0	0	10	0	built land; flying	KS
HG082	26/03/2021	09:39	Herring Gull	4	20	20	0	0	0	built land and amenity grassland (improved); flying	KS
LB013	26/03/2021	09:41	Lesser Black-backed Gull	1	15	0	15	0	0	built land and amenity grassland (improved); flying	KS
HG083	26/03/2021	09:54	Herring Gull	6	20	20	0	0	0	amenity grassland (improved); flying	KS
HG084	26/03/2021	09:58	Herring Gull	3	15	0	15	0	0	#N/A	KS
LB014	26/03/2021	10:07	Lesser Black-backed Gull	2	30	0	30	0	0	built land and amenity grassland (improved); flying	KS
LB015	26/03/2021	10:12	Lesser Black-backed Gull	1	20	20	0	0	0	amenity grassland (improved) and built land; flying	KS
BH085	26/03/2021	10:23	Black-headed Gull	1	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
LB016	26/03/2021	10:50	Lesser Black-backed Gull	1	20	20	0	0	0	amenity grassland (improved) and built land; flying	KS
HG085	26/03/2021	10:57	Herring Gull	3	15	0	15	0	0	built land; flying	KS
BH086	26/03/2021	10:59	Black-headed Gull	1	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
HG086	26/03/2021	11:09	Herring Gull	2	20	20	0	0	0	amenity grassland (improved) and built land; flying	KS
LB017	26/03/2021	11:22	Lesser Black-backed Gull	1	25	25	0	0	0	amenity grassland (improved) and built land; flying	KS
HG087	26/03/2021	11:22	Herring Gull	2	20	20	0	0	0	amenity grassland (improved) and built land; flying	KS

Map Ref.	Date	Time	Species	Number of birds	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-20m)	Band 3 (20-30m)	Band 4 (>30m)	Habitat and activity	Surveyor
LB018	26/03/2021	11:25	Lesser Black-backed Gull	5	30	30	0	0	0	built land and amenity grassland (improved); flying	KS
HG088	26/03/2021	11:35	Herring Gull	9	35	0	0	35	0	built land; flying	KS
LB019	26/03/2021	11:43	Lesser Black-backed Gull	3	20	20	0	0	0	built land; flying	KS
HG089	26/03/2021	13:11	Herring Gull	2	15	15	0	0	0	built land and amenity grassland (improved); flying	KS
MA004	26/03/2021	13:16	Mallard	4	60	60	0	0	0	built land and amenity grassland (improved); flying	KS
LB020	26/03/2021	13:24	Lesser Black-backed Gull	4	15	15	0	0	0	amenity grassland (improved) and built land; flying	KS
HG090	26/03/2021	13:39	Herring Gull	8	45	0	45	0	0	built land and amenity grassland (improved); flying	KS
LB021	26/03/2021	13:51	Lesser Black-backed Gull	1	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
LB022	26/03/2021	14:04	Lesser Black-backed Gull	1	70	70	0	0	0	built land; flying	KS
HG091	26/03/2021	14:06	Herring Gull	8	30	30	0	0	0	built land and amenity grassland (improved); flying	KS
LB023	26/03/2021	14:18	Lesser Black-backed Gull	1	45	45	0	0	0	built land and amenity grassland (improved); flying	KS
HG092	26/03/2021	14:41	Herring Gull	4	30	0	30	0	0	built land; flying	KS
MA005	26/03/2021	14:52	Mallard	2	20	20	0	0	0	built land and amenity grassland (improved); flying, landed on water	KS
LB024	26/03/2021	14:53	Lesser Black-backed Gull	1	10	10	0	0	0	built land and amenity grassland (improved); flying	KS
HG093	26/03/2021	15:08	Herring Gull	4	20	20	0	0	0	built land and amenity grassland (improved); flying	KS
HG094	26/03/2021	15:24	Herring Gull	2	20	0	20	0	0	built land; flying	KS
HG095	26/03/2021	15:28	Herring Gull	5	30	0	30	0	0	amenity grassland (improved) and built land; flying	KS
HG096	26/03/2021	15:39	Herring Gull	1	10	10	0	0	0	amenity grassland (improved) and built land; flying	KS

Map Ref.	Date	Time	Species	Number of birds	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-20m)	Band 3 (20-30m)	Band 4 (>30m)	Habitat and activity	Surveyor
BH087	26/03/2021	15:42	Black-headed Gull	2	20	0	0	0	20	amenity grassland (improved) and built land; flying	KS

Table 4 Habitat Survey Results

Date	Time	Sample Point	Habitat Structure	Notes	Surveyor
13/11/2020		Hell Hole (m), point 1	Sward height of 5.5cm; 100% grass, 0% forbs and 0% bare ground	0 brent goose droppings, cut earlier that day	DW
13/11/2020		Hell Hole (m), point 2	Sward height of 5cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings, cut earlier that day	DW
13/11/2020		Hell Hole (m), point 3	Sward height of 7cm; 100% grass, 0% forbs and 0% bare ground	0 brent goose droppings, cut earlier that day	DW
13/11/2020		Hell Hole (m), point 4	Sward height of 6.5cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings, cut earlier that day	DW
13/11/2020		Hell Hole (m), point 5	Sward height of 5.5cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings, cut earlier that day	DW
13/11/2020		Hell Hole (m), point 6	Sward height of 4.5cm; 70% grass, 30% forbs and 0% bare ground	0 brent goose droppings, cut earlier that day	DW
13/11/2020		Hell Hole (m), point 7	Sward height of 7cm; 80% grass, 20% forbs and 0% bare ground	0 brent goose droppings, cut earlier that day	DW
13/11/2020		Hell Hole (m), point 8	Sward height of 6.5cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings, cut earlier that day	DW
13/11/2020		Hell Hole (m), point 9	Sward height of 8cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings, cut earlier that day	DW
13/11/2020		Hell Hole (m), point 10	Sward height of 8.5cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings, cut earlier that day	DW
13/11/2020		Fields (m), point 1	Sward height of 16cm; 100% grass, 0% forbs and 0% bare ground	0 brent goose droppings	DW
13/11/2020		Fields (m), point 2	Sward height of 13cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings	DW
13/11/2020		Fields (m), point 3	Sward height of 17cm; 100% grass, 0% forbs and 0% bare ground	0 brent goose droppings	DW
13/11/2020		Fields (m), point 4	Sward height of 15cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings	DW
13/11/2020		Fields (m), point 5	Sward height of 14cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings	DW
13/11/2020		Fields (m), point 6	Sward height of 12cm; 80% grass, 20% forbs and 0% bare ground	0 brent goose droppings	DW
13/11/2020		Fields (m), point 7	Sward height of 16cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings	DW
13/11/2020		Fields (m), point 8	Sward height of 14cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings	DW
13/11/2020		Fields (m), point 9	Sward height of 17cm; 100% grass, 0% forbs and 0% bare ground	0 brent goose droppings	DW
13/11/2020		Fields (m), point 10	Sward height of 12cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings	DW
13/11/2020		Ball Alley (m), point 1	Sward height of 6.5cm; 60% grass, 40% forbs and 0% bare ground	0 brent goose droppings	DW
13/11/2020		Ball Alley (m), point 2	Sward height of 8.5cm; 70% grass, 30% forbs and 0% bare ground	0 brent goose droppings	DW
13/11/2020		Ball Alley (m), point 3	Sward height of 5cm; 70% grass, 30% forbs and 0% bare ground	0 brent goose droppings	DW
13/11/2020		Ball Alley (m), point 4	Sward height of 5.5cm; 70% grass, 30% forbs and 0% bare ground	0 brent goose droppings	DW
13/11/2020		Ball Alley (m), point 5	Sward height of 6.5cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings	DW
13/11/2020		Ball Alley (m), point 6	Sward height of 6.5cm; 80% grass, 20% forbs and 0% bare ground	0 brent goose droppings	DW

Date	Time	Sample Point	Habitat Structure	Notes	Surveyor
13/11/2020		Ball Alley (m), point 7	Sward height of 8cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings	DW
13/11/2020		Ball Alley (m), point 8	Sward height of 7.5cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings	DW
13/11/2020		Ball Alley (m), point 9	Sward height of 7.5cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings	DW
13/11/2020		Ball Alley (m), point 10	Sward height of 7.5cm; 70% grass, 25% forbs and 5% bare ground	0 brent goose droppings	DW
18/12/2020	11:00	Dundrum (300m), point 1	Sward height of 50cm; 100% grass, 0% forbs and 0% bare ground	0 brent goose droppings	KS
18/12/2020	11:00	Dundrum (300m), point 2	Sward height of 40cm; 80% grass, 20% forbs and 0% bare ground	0 brent goose droppings	KS
18/12/2020	11:00	Dundrum (300m), point 3	Sward height of 40cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings	KS
18/12/2020	11:00	Dundrum (300m), point 4	Sward height of 40cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
18/12/2020	11:00	Dundrum (300m), point 5	Sward height of 50cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
18/12/2020	11:00	Dundrum (300m), point 6	Sward height of 100cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
18/12/2020	11:00	Dundrum (300m), point 7	Sward height of 80cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
18/12/2020	11:00	Dundrum (300m), point 8	Sward height of 150cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings	KS
18/12/2020	11:00	Dundrum (300m), point 9	Sward height of 50cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings	KS
18/12/2020	11:00	Dundrum (300m), point 10	Sward height of 70cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
04/01/2021	11:00	Dundrum (m), point 1	Sward height of 150cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings	KS
04/01/2021	11:00	Dundrum (m), point 2	Sward height of 80cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
04/01/2021	11:00	Dundrum (m), point 3	Sward height of 120cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
04/01/2021	11:00	Dundrum (m), point 4	Sward height of 100cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
04/01/2021	11:00	Dundrum (m), point 5	Sward height of 100cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
04/01/2021	11:00	Dundrum (m), point 6	Sward height of 70cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
04/01/2021	11:00	Dundrum (m), point 7	Sward height of 150cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings	KS
04/01/2021	11:00	Dundrum (m), point 8	Sward height of 120cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
04/01/2021	11:00	Dundrum (m), point 9	Sward height of 100cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
04/01/2021	11:00	Dundrum (m), point 10	Sward height of 120cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings	KS
18/01/2021	14:00	Dundrum 1 (100m), point 1	Sward height of 12cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings	KS
18/01/2021	14:00	Dundrum 1 (100m), point 2	Sward height of 10cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings	KS

Date	Time	Sample Point	Habitat Structure	Notes	Surveyor
18/01/2021	14:00	Dundrum 1 (100m), point 3	Sward height of 15cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
18/01/2021	14:00	Dundrum 1 (100m), point 4	Sward height of 20cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
18/01/2021	14:00	Dundrum 1 (100m), point 5	Sward height of 10cm; 85% grass, 15% forbs and 0% bare ground	0 brent goose droppings	KS
18/01/2021	14:30	Dundrum 2 (80m), point 1	Sward height of 15cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
18/01/2021	14:30	Dundrum 2 (80m), point 2	Sward height of 10cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings	KS
18/01/2021	14:30	Dundrum 2 (80m), point 3	Sward height of 20cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
18/01/2021	14:30	Dundrum 2 (80m), point 4	Sward height of 20cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings	KS
18/01/2021	14:30	Dundrum 2 (80m), point 5	Sward height of 15cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
29/01/2021	11:00	Dundrum 1 (100m), point 1	Sward height of 10cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings	KS
29/01/2021	11:00	Dundrum 1 (100m), point 2	Sward height of 5cm; 85% grass, 15% forbs and 0% bare ground	0 brent goose droppings	KS
29/01/2021	11:00	Dundrum 1 (100m), point 3	Sward height of 3cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
29/01/2021	11:00	Dundrum 1 (100m), point 4	Sward height of 4cm; 100% grass, 0% forbs and 0% bare ground	0 brent goose droppings	KS
29/01/2021	11:00	Dundrum 1 (100m), point 5	Sward height of 5cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
29/01/2021	12:30	Dundrum 2 (100m), point 1	Sward height of 10cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings	KS
29/01/2021	12:30	Dundrum 2 (100m), point 2	Sward height of 15cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
29/01/2021	12:30	Dundrum 2 (100m), point 3	Sward height of 4cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
29/01/2021	12:30	Dundrum 2 (100m), point 4	Sward height of 10cm; 85% grass, 15% forbs and 0% bare ground	0 brent goose droppings	KS
29/01/2021	12:30	Dundrum 2 (100m), point 5	Sward height of 5cm; 80% grass, 20% forbs and 0% bare ground	0 brent goose droppings	KS
12/02/2021	14:00	Dundrum 1 (200m), point 1	Sward height of 5cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
12/02/2021	14:00	Dundrum 1 (200m), point 2	Sward height of 7cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings	KS
12/02/2021	14:00	Dundrum 1 (200m), point 3	Sward height of 10cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
12/02/2021	14:00	Dundrum 1 (200m), point 4	Sward height of 7cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings	KS
12/02/2021	14:00	Dundrum 1 (200m), point 5	Sward height of 10cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings	KS
12/02/2021	14:45	Dundrum 1 (200m), point 1	Sward height of 10cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings	KS
12/02/2021	14:00	Dundrum 2 (200m), point 2	Sward height of 12cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
12/02/2021	14:45	Dundrum 2 (200m), point 3	Sward height of 5cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings	KS

Date	Time	Sample Point	Habitat Structure	Notes	Surveyor
12/02/2021	14:45	Dundrum 2 (200m), point 4	Sward height of 4cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
12/02/2021	14:45	Dundrum 2 (200m), point 5	Sward height of 5cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings	KS
26/02/2021	14:30	Dundrum 2 (200m), point 1	Sward height of 12cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings	KS
26/02/2021	14:30	Dundrum 2 (200m), point 2	Sward height of 10cm; 100% grass, 0% forbs and 0% bare ground	0 brent goose droppings	KS
26/02/2021	14:30	Dundrum 1 (200m), point 3	Sward height of 15cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings	KS
26/02/2021	14:30	Dundrum 1 (200m), point 4	Sward height of 10cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
26/02/2021	14:30	Dundrum 1 (200m), point 5	Sward height of 12cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
26/02/2021	15:00	Dundrum 2 (200m), point 1	Sward height of 3cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings, mown recently	KS
26/02/2021	15:00	Dundrum 2 (200m), point 2	Sward height of 2cm; 100% grass, 0% forbs and 0% bare ground	0 brent goose droppings, mown recently	KS
26/02/2021	15:00	Dundrum 2 (200m), point 3	Sward height of 4cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings, mown recently	KS
26/02/2021	15:00	Dundrum 2 (200m), point 4	Sward height of 5cm; 100% grass, 0% forbs and 0% bare ground	0 brent goose droppings, mown recently	KS
26/02/2021	15:00	Dundrum 2 (200m), point 5	Sward height of 2cm; 100% grass, 0% forbs and 0% bare ground	0 brent goose droppings, mown recently	KS
12/03/2021	13:50	Dundrum 1 (100m), point 1	Sward height of 10cm; 100% grass, 0% forbs and 0% bare ground	0 brent goose droppings	KS
12/03/2021	13:50	Dundrum 1 (100m), point 2	Sward height of 7cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
12/03/2021	13:50	Dundrum 1 (100m), point 3	Sward height of 20cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings	KS
12/03/2021	13:50	Dundrum 1 (100m), point 4	Sward height of 7cm; 100% grass, 0% forbs and 0% bare ground	0 brent goose droppings	KS
12/03/2021	13:50	Dundrum 1 (100m), point 5	Sward height of 5cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings	KS
12/03/2021	15:24	Dundrum 2 (100m), point 1	Sward height of 10cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
12/03/2021	15:24	Dundrum 2 (100m), point 2	Sward height of 10cm; 80% grass, 20% forbs and 0% bare ground	0 brent goose droppings	KS
12/03/2021	15:24	Dundrum 2 (100m), point 3	Sward height of 7cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
12/03/2021	15:24	Dundrum 2 (100m), point 4	Sward height of 5cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
12/03/2021	15:24	Dundrum 2 (100m), point 5	Sward height of 5cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings	KS
26/03/2021	14:00	Dundrum 1 (100m), point 1	Sward height of 4cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings, mown	KS
26/03/2021	14:00	Dundrum 1 (100m), point 2	Sward height of 2cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings, mown	KS
26/03/2021	14:00	Dundrum 1 (100m), point 3	Sward height of 3cm; 100% grass, 0% forbs and 0% bare ground	0 brent goose droppings, mown	KS
26/03/2021	14:00	Dundrum 1 (100m), point 4	Sward height of 3cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings, mown	KS

Date	Time	Sample Point	Habitat Structure	Notes	Surveyor
26/03/2021	14:00	Dundrum 1 (100m), point 5	Sward height of 5cm; 100% grass, 0% forbs and 0% bare ground	0 brent goose droppings, mown	KS
26/03/2021	14:30	Dundrum 1 (100m), point 1	Sward height of 5cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
26/03/2021	14:30	Dundrum 2 (100m), point 2	Sward height of 4cm; 90% grass, 10% forbs and 0% bare ground	0 brent goose droppings	KS
26/03/2021	14:30	Dundrum 2 (100m), point 3	Sward height of 15cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
26/03/2021	14:30	Dundrum 2 (100m), point 4	Sward height of 5cm; 95% grass, 5% forbs and 0% bare ground	0 brent goose droppings	KS
26/03/2021	14:30	Dundrum 2 (100m), point 5	Sward height of 7cm; 99% grass, 1% forbs and 0% bare ground	0 brent goose droppings	KS

APPENDIX 2

FIGURES



Map Legend

- Proposed Development Boundary
- 500m Survey Radius
- Vantage Point Locations

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Drawing Title	Proposed Development Site
Project Title	TPA Dundrum
Drawn By: P. Manley	Checked By: P. Cregg
Project No.: 200828	Drawing No.: Fig. 1
Scale: 1:8000	Date: 16/04/2020

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+353 (0) 91 735611
email:info@mkoireland.ie
Website: ww.mkoireland.ie



Map Legend

- Proposed Development Boundary
- 500m Survey Radius
- Flightline

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Drawing Title: Black-headed Gull Flights Winter Surveys

Project Title: TPA Dundrum

Drawn By	Checked By
P. Manley	P. Cregg
Project No.	**Drawing No.**
200828	Fig. 1.1
Scale	**Date**
1:8000	16/04/2020

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- Proposed Development Boundary
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Drawing Title: Black-headed Gull Flocks Winter Surveys

Project Title: TPA Dundrum

Drawn By	Checked By
P. Manley	P. Cregg
Project No.	Drawing No.
200828	Fig. 1.1.1
Scale	Date
1:8000	16/04/2020

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Drawing Title	Brent Goose Flights Winter Surveys
Project Title	TPA Dundrum
Drawn By: P. Manley	Checked By: P. Cregg
Project No.: 200828	Drawing No.: Fig. 1.2
Scale: 1:8000	Date: 16/04/2020

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Map Legend

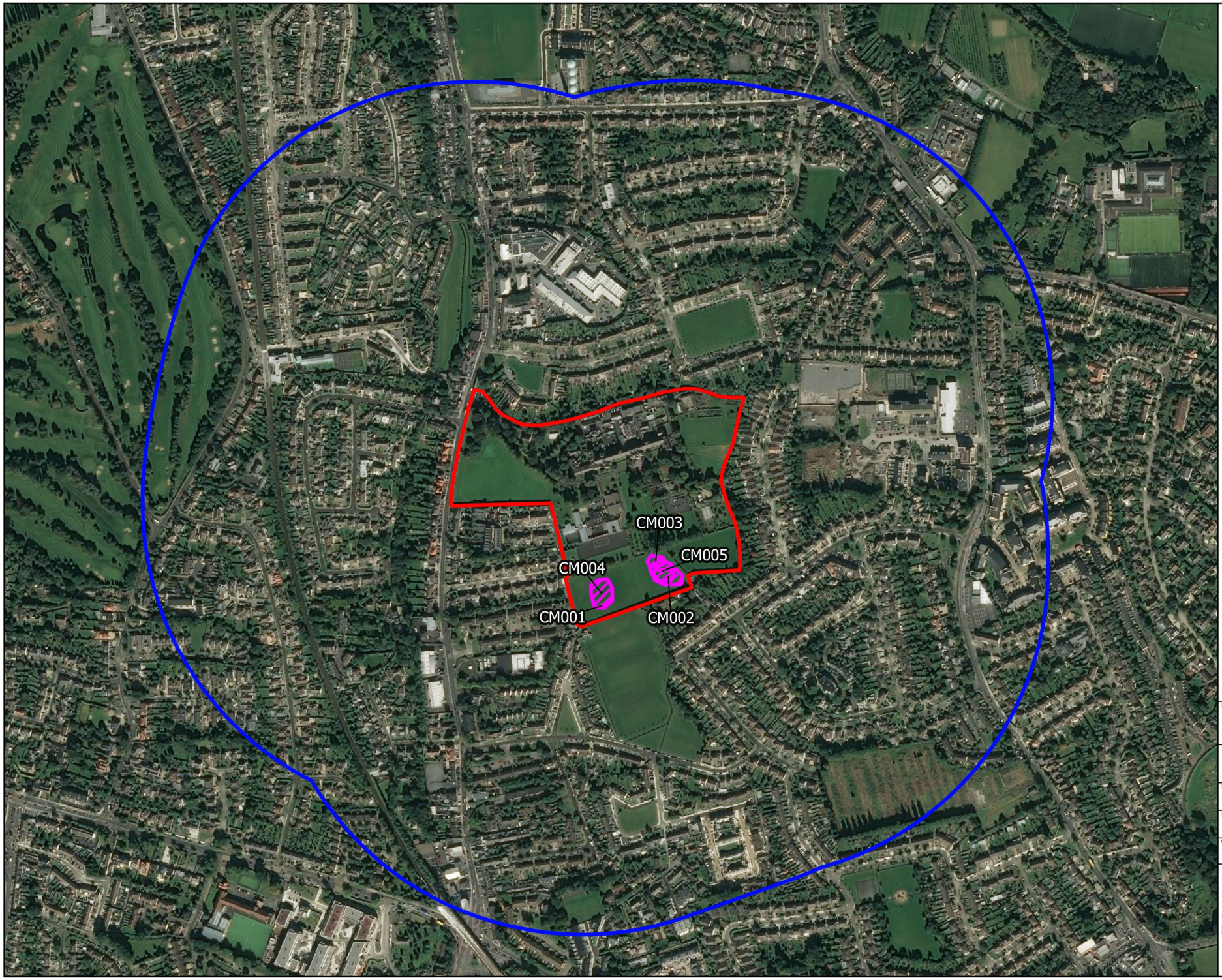
- Proposed Development Boundary
- 500m Survey Radius
- Flightline

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Drawing Title	Common Gull Flights Winter Surveys
Project Title	TPA Dundrum
Drawn By: P. Manley	Checked By: P. Cregg
Project No.: 200828	Drawing No.: Fig. 1.3
Scale: 1:8000	Date: 16/04/2020

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- Proposed Development Boundary
- 500m Survey Radius
- Flock

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Drawing Title	Common Gull Flocks Winter Surveys
Project Title	TPA Dundrum
Drawn By: P. Manley	Checked By: P. Cregg
Project No.: 200828	Drawing No.: Fig. 1.3.1
Scale: 1:8000	Date: 16/04/2020

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- Proposed Development Boundary
- 500m Survey Radius
- Flightline

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Drawing Title	Curlew Flights Winter Surveys
Project Title	TPA Dundrum
Drawn By: P. Manley	Checked By: P. Cregg
Project No.: 200828	Drawing No.: Fig. 1.4
Scale: 1:8000	Date: 16/04/2020

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Map Legend

- Proposed Development Boundary
- 500m Survey Radius
- Flock

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Drawing Title
Curlew Flocks
Winter Surveys

Project Title
TPA Dundrum

Drawn By	Checked By
P. Manley	P. Cregg
Project No.	Drawing No.
200828	Fig. 1.4.1
Scale	Date
1:8000	16/04/2020

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Map Legend

- Proposed Development Boundary
- 500m Survey Radius
- Flightline

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Drawing Title	Little Egret Flights Winter Surveys
Project Title	TPA Dundrum
Drawn By: P. Manley	Checked By: P. Cregg
Project No.: 200828	Drawing No.: Fig. 1.5
Scale: 1:8000	Date: 16/04/2020

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Map Legend

- Proposed Development Boundary
- 500m Survey Radius
- Flightline

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Drawing Title
Great Black-backed Gull Flights Winter Surveys

Project Title
TPA Dundrum

Drawn By	Checked By
P. Manley	P. Cregg
Project No.	Drawing No.
200828	Fig. 1.6
Scale	Date
1:8000	16/04/2020

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Map Legend
Proposed Development Boundary
500m Survey Radius
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Drawing Title
Herring Gull Flights Winter Surveys
Project Title
TPA Dundrum
Drawn By
P. Manley
Checked By
P. Cregg
Project No.
200828
Drawing No.
Fig. 1.7
Scale
1:8000
Date
16/04/2020
MKO
Planning and Environmental Consultants
Tuam Road, Galway
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+353 (0) 91 735611
email:info@mkoireland.ie
Website: ww.mkoireland.ie



Map Legend

- Proposed Development Boundary
- 500m Survey Radius
- Flock

N

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Drawing Title
Herring Gull Flocks Winter Surveys

Project Title
TPA Dundrum

Drawn By	Checked By
P. Manley	P. Cregg
Project No.	Drawing No.
200828	Fig. 1.7.1
Scale	Date
1:8000	16/04/2020

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Map Legend

- Proposed Development Boundary
- 500m Survey Radius
- Flightline

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Drawing Title	Lesser Black-backed Gull Flights Winter Surveys
Project Title	TPA Dundrum
Drawn By: P. Manley	Checked By: P. Cregg
Project No.: 200828	Drawing No.: Fig. 1.8
Scale: 1:8000	Date: 16/04/2020

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Map Legend

- Proposed Development Boundary
- 500m Survey Radius
- Flock

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Drawing Title
Lesser Black-backed Gull Flocks Winter Surveys

Project Title
TPA Dundrum

Drawn By	Checked By
P. Manley	P. Cregg
Project No.	Drawing No.
200828	Fig. 1.8.1
Scale	Date
1:8000	16/04/2020

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Map Legend

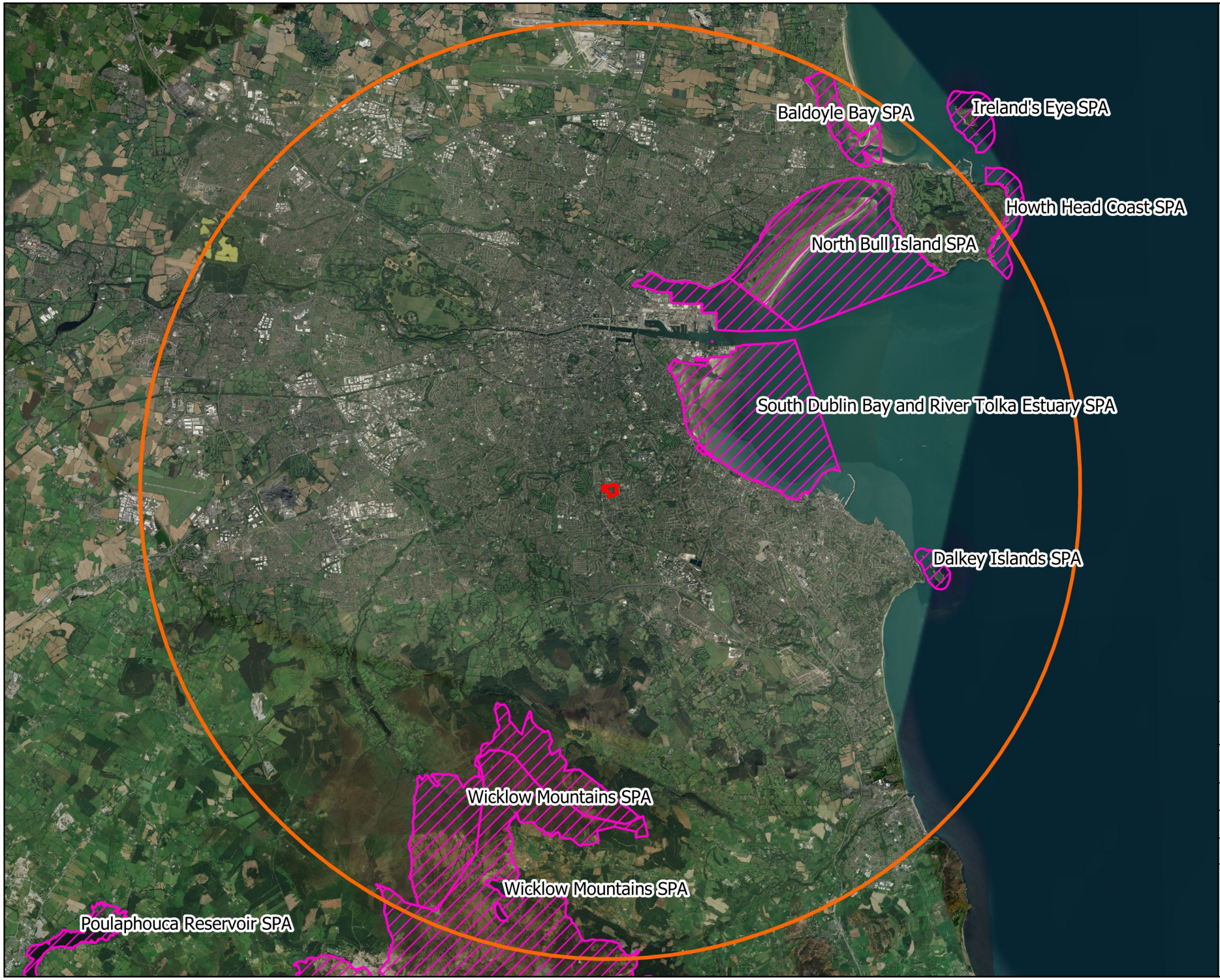
- Proposed Development Boundary
- 500m Survey Radius
- Flightline

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N

Drawing Title	Mallard Flights Winter Surveys
Project Title	TPA Dundrum
Drawn By	P. Manley
Checked By	P. Cregg
Project No.	200828
Drawing No.	Fig. 1.9
Scale	1:8000
Date	16/04/2020

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Map Legend

- Proposed Development Boundary
- 15km Zone of Influence
- Special Protection Area

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Drawing Title: SPAs within the ZOI of the Proposed Development Site

Project Title: TPA Dundrum

Drawn By	Checked By
P. Manley	P. Cregg
Project No.	Drawing No.
200828	Fig. 2
Scale	Date
1:160000	16/04/2020

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APPENDIX 3

CURRICULUM VITAE

Planning and Environmental Consultants

CURRICULUM VITAE



Dervla O'Dowd

Dervla O'Dowd is Project Director with MKO's Ornithology Team with fourteen years of experience in environmental consultancy as a Senior Ecologist and Project Manager. Dervla graduated with a first-class honours B.Sc. in Environmental Science from NUI, Galway in 2005 and joined Keville O'Sullivan Associates in the same year. Dervla has gained extensive experience in the project management and ecological assessment of the impacts of various infrastructural projects including wind energy projects, water supply schemes, road schemes and housing developments nationwide and has also been involved in the compilation of Environmental Impact Reports and acted as EIR co-ordinator on many of these projects. Dervla has also extensive experience in the provision of ecological site supervision for infrastructural works within designated conservations areas, in particular within aquatic habitats, and has also been involved in the development of environmental/ecological educational resource materials. Currently, Dervla is responsible for coordinating ecological work, in particular, ornithological surveys, required on major infrastructural projects, with emphasis on wind energy projects. Dervla's key strengths and areas of expertise are in project management, project strategy, business development and survey co-ordination to ensure the efficient operation of the Ornithology team's field survey schedule. Dervla holds full membership of the Chartered Institute of Ecology and Environmental Management and current Safe Pass card.

Current Role	Project Director (Ornithology)
Qualifications	› B.A. (Archaeology & German) (1996), H. Dip. (Education) (1999) › B.Sc. (Environmental Science) (2005) National University of Ireland, Galway
Years of Experience	› 14 years post graduate experience in environmental consultancy.
Relevant Experience	› Currently responsible for the management of a team of approximately 25 field surveyors undertaking bird surveys nationwide at the sites of c.25 renewable energy projects at various stages of their project life cycle and the delivery of compiled, processed bird survey data to clients based on highest industry standards. › Co-ordination of the ecological component of over 20 Wind Farm projects nationwide at various stages including pre-planning, EISs, appeals, pre-commencement and condition compliance, construction and post-construction stages. Defining the scope of the ecological works required at each stage of projects, scheduling all works, coordinating and managing a team of up to twenty field staff/sub-consultants and overseeing the ecological inputs into all stages of these projects (2014-2016). › Project Manager, Article 6(3) Screening Review of entire OPW Drainage Maintenance Programme 2011. Compilation of 31 screening reports on arterial drainage scheme catchment basis nationwide. › Senior Ecologist on habitat mapping projects for Waterways Ireland on the Royal Canal and Barrow Navigation (2010-2013). › Senior Ecologist; OPW Channel Maintenance Assessments 2009/2010. Co-ordination and completion of assessment of impacts of channel maintenance works within designated sites throughout Ireland. › Project Manager and Senior Ecologist, N59 Moycullen Bypass Preliminary Ecological Assessment/Appropriate Assessments, responsible for all ecological surveying including aquatic and bat survey and habitat mapping. › Project Co-ordinator and Senior Ecologist and; N17 Tuam Bypass; 2009; Design/pre-planning stage; Environmental Report. Responsible for ecological issues including survey requirements, habitat mapping and Appropriate Assessment Screening. › Senior Ecologist; Group Water Scheme Bundles (Galway, Mayo, Roscommon, Clare); 2005 to 2010; Preliminary design through to construction sign off; Assessment of over 75 sites; liaison with statutory consultees, development of approved working methods and

	construction supervision in most sensitive sites. Most were within or adjacent to SACs/SPAs/NHAs with significant constraints. › Senior Ecologist; Appropriate Assessment for Wastewater Treatment Plant Discharge Licence Applications in Co.s Galway and Limerick. Responsible for consultation, surveys, including detailed aquatic surveys, report preparation and appropriate assessment for sites within/adjacent to SACs/SPAs/NHAs with significant ecological constraints. › Project Ecologist on various development-led projects. Responsible for consultation, appropriate assessment, site surveys, report preparation, appropriate assessment and construction site mitigation planning/supervision.
Practical Skills & Aptitudes	› Team management. › Project management. › Co-ordination of complex field survey schedules/projects. › Project strategy. › Report-writing. › Ecological surveys including botanical surveys, habitat assessments, aquatic surveys (Stage 1 and 2 Freshwater Pearl Mussel survey licence holder, Crayfish surveys, freshwater invertebrate surveys), mammal surveys, bat surveys etc. › GIS (Mapinfo v. 10.0), proficient in use of MS Office programmes.
Management/ Supervision	› Responsible for the management of MKO Ornithology team of c. 25 in-house ornithologists and regular sub-contractors. › Management and coordination of ecological inputs for EISs, FI responses and Grounds of Appeal for c. 20 wind farm projects nationwide to date. › Project Coordinator for EISs and Environmental Reports for a range of infrastructural and residential developments. › Project manager and senior ecologist on large scale ecological projects. › Extensive experience of ecological assessment and mitigation management of development sites nationwide over past 14 years. › Accustomed to working effectively as part of larger multidisciplinary project design teams.
Interpersonal & Communication Skills	› Experience of coordinating large team of field staff and sub-consultants for ecological works at over 20 wind farm sites throughout the country. › Experience co-ordinating project teams for EISs and Environmental reports for projects such as wind energy developments, solar energy projects, road and residential developments. › Extensive experience in successful dealings with statutory ecological consultees including NPWS and IFI, usually regarding sensitive ecological sites. › Significant experience co-ordinating approach to sensitive ecological sites between client and ecological consultees and contractors, etc. › Development of technical working methodologies on behalf of contractors requiring understanding of both proposed works and sensitivities of site › Experience in environmental education presentations and training for contractors, clients and the general public.
Licenses Held	› Wildlife Act Section 22 & 23 Crayfish › Wildlife Act Section 22 & 23 Pearl Mussel › Current Safe Pass holder. › Full member of the Chartered Institute of Ecology & Environmental Management (CIEEM).

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CURRICULUM VITAE



Patrick Manley

Patrick Manley is a Project Ornithologist at MKO. He attended University College Dublin where he completed a BSc (Hons) in Geology. Patrick has over five years' experience working with MKO in designing and executing ornithological surveys, primarily within the renewables sector. Patrick has also worked on ornithological chapters of Environmental Impact Assessment Report (EIAR) to accompany planning applications. Prior to joining the company Patrick worked as part of the conservation team in BirdWatch Ireland, on projects such as the Dublin bay birds project, Kilcoole Little Tern conservation project and the results based agri-environmental scheme for breeding waders. He has extensive experience surveying birds through other projects such as the Irish wetlands bird survey, the Inishmurray all-island breeding birds survey, the national Hen Harrier survey and the countryside bird survey.

Current Role	Project Ornithologist
Qualifications	› BSc Geology, University College Dublin (2013).
Years of Experience	› 7 years post graduate experience in wildlife conservation and monitoring.
Relevant Experience	**Relevant Work Experience:** › Field ornithologist as part of the Little Tern Conservation Project with BirdWatch Ireland for two breeding seasons (2015 & 2016). Patrick gained experience in monitoring and protecting a vulnerable species and in the collection, collation and analyses of large data sets. He was also responsible for liaising with the public, the writing of weekly reports and full technical reports at the end of each breeding season. › Agri-Environmental Liaison Officer for the Results Based Agri-Environmental Payment Scheme with BirdWatch Ireland. Patrick gained experience in liaising with land owners, coordinating and finalizing terms with participants of the scheme. He also gained skills in the ecological applications for GIS, in training landowners in land management for breeding birds and in carrying out breeding bird surveys. › Conservation Team Intern with the Dublin Bay Birds Project for BirdWatch Ireland. Patrick gained experience in compiling, proofing and analysing large datasets, as well as waterbird monitoring during various tidal and weather conditions and writing technical reports. › Field Assistant with the Dublin Bay Birds Project with BirdWatch Ireland. Patrick gained experience doing waterbird surveys, radio tracking surveys and the tracking of colour ringed waders. He also gained experience in collating, proofing and validating large datasets. He was also responsible for fitting colour rings to waders during multiple catching sessions. › Volunteer Bird Surveyor on various projects including the Irish wetlands bird survey, the Inishmurray all-island breeding bird survey, the national Hen Harrier survey and the countryside bird survey. **Relevant Experience within MKO:** › Wind Farm Projects Patrick has worked on over 30 wind farm projects across Ireland. Patrick has expert experience in interpreting and implementing Scottish Natural Heritage (SNH, 2017) guidance for ornithological surveys of wind farms, in an Irish context. Patrick's key responsibilities within MKO include: designing and executing ornithological surveys at wind farm site, writing reports such as interim report, end-of-season reports, client updates etc.,

	designing mitigation measures for ornithologically sensitive species, and drafting ornithology chapters for Environmental Impact Assessment Reports (EIAR). › Solar Farm Projects Patrick has worked been responsible for conducting ornithological surveys at solar farm sites during both the breeding and winter seasons. › Large Scale Bird Monitoring Projects Patrick has been involved in a number of large scale bird monitoring projects whilst working for MKO, for clients such as the National Parks and Wildlife Service and Clare County Council. Such projects include the Shannon-Fergus Estuary waterfowl usage surveys and Lough Derg bird usage surveys. Patrick was involved in designing and conducting surveys, as well as writing the final reports for these surveys.
Practical Skills & Aptitudes	› Planning and carrying out ornithological surveys. › Working Independently and effectively in the field. › Planning surveys with sub-contractors and management. › Data presentation. › Proficient in MS Office, GIS and MapInfo software. › Adhering to required guidelines and SOP's on bird survey methodologies. › Experience surveying birds using line transects, vantage point counts, flush counts, mist netting, radio tracking and GSM trackers
Management/ Supervision	› Management of all bird surveys carried out on site. › Demonstrated ability to manage workload and plan surveys based on own initiative. › Experience managing field sites and coordinating large teams of volunteers for the Little Tern Conservation Projects 2015 and 2016 › Experience coordinating and supervising volunteers during the all-island seabird survey on Inishmurray. › Experience coordinating and liaising with volunteers/surveyors with BirdWatch Ireland and Irish Midlands Ringing Group on various projects.
Interpersonal & Communication Skills	› Extensive dealings with ecology team in planning of bird survey work and standard operating procedures. › Effective and clear communicator. › Proven ability to manage extensive survey requirements and collation of data upon completion. › Planning surveys with team members and sub-contractors. › Experience coordinating workloads and delegating tasks as a member of both large and small teams of volunteers on a number of different projects with BirdWatch Ireland and the Irish Midlands Ringing Group, often in challenging fieldwork environments. › Experience as lead author or co-author on technical project reports. › Managed public relations and public outreach for the Little Tern Conservation Project in 2015 and 2016 (including an appearance on RTE series "EcoEye" in January 2016). › Experience giving bird ringing demonstrations to various groups including BirdWatch Ireland branch members, Dublin Field Naturalist club and during heritage week.
Licenses Held	› Full Clean Driving Licence. › Current Safe Pass Holder.

Physical / Other	› Ability to plan and organize fieldwork in line with published survey methodologies and company SOP's. › Qualified bird ringer and ringing trainer with British Trust for Ornithology

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CURRICULUM VITAE

Kathryn Sheridan

Kathryn is an Ornithologist at MKO who took up her position in December 2020. Kathryn has experience of working on a wide range of bird species, beginning with her M. SC. thesis on breeding hen harrier. From this, Kathryn has gone on to work as Curlew Champion as part of the Curlew Conservation Programme, and Swift fieldworker with BirdWatch Ireland. As a sub-consultant, Kathryn has completed wintering wildfowl surveys across Ireland, as well as completing bat and mammal surveys. Throughout this work experience, Kathryn has continued to build her skills in writing and the use of GIS.

Current Role	Ornithologist
Qualifications	› M. Sc., Wildlife Conservation and Management, First Class Honours. University College Dublin. › BA Natural Science: Zoology, Second Class, First Division Honours. Trinity College Dublin.
Years of Experience	› 1 – 2 years
Relevant Experience	› Bird survey experience carrying out a range of bird survey methodology such as vantage point surveys, wintering wildfowl surveys, breeding bird surveys (including breeding raptor surveys). › Data management and GIS experience: as part of an M. Sc. Thesis and continuing into professional work. › Writing experience: one scientific paper on breeding hen harrier and several end of breeding season reports.
Practical Skills & Aptitudes	› Bird identification skills (visual & aural) › Further experience in the identification of mammals, butterflies and bats
Interpersonal & Communication Skills	› Experience of liaising with landowners for the allowance of site access › Experience of communicating with members of the public when conducting surveys and gathering bird sighting reports
Licenses Held	› Full, clean driving license

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CURRICULUM VITAE



Donnacha Woods

Donnacha is a Project Ornithologist with MKO. Donnacha worked as a field ornithologist on range of projects across multiple countries, roles in Ireland with BirdWatch Ireland, and in Canada and France with respective NGOs. Donnacha then worked as an ecologist with both Enviroguide Consulsting and Mott MacDonald, before joining MKO in August 2020. Donnacha has a B.Sc. in Zoology from UCD, and a M.Sc. in Biodiversity and Conservation from Trinity College Dublin.

Current Role	Project Ornithologist
Qualifications	M.Sc. Biodiversity and Conservation – Trinity College Dublin (2011) B.Sc. Zoology – University College Dublin (2009) Diploma in Environmental Impact Assessment – Portobello Institute (2016) Certificate in Wild Plant Identification – IT Sligo (2018)
Memberships	Associate Member of the Chartered Institute of Ecology and Environmental Management (CIEEM)
Years of Experience	6 years' experience across both NGO and private consultancy sectors
Relevant Experience	Ecologist, Mott MacDonald Ireland Ltd., Dublin (2019 – 2020) Project Ecologist, Enviroguide Consulting, Dublin (2017 – 2019) Field Ornithologist, Wildlife Preservation Canada, Ontario, Canada (2015) Field Ornithologist, BirdWatch Ireland, Rockabill, Dublin (2014) Field Ornithologist, A Rocha, France (2012 - 2013) Conservation Intern, Great Basin Institute, Nevada USA (2011)
Key Strengths & Areas of Expertise	Bird Surveying: Experience both designing and carrying out a diverse range of ornithological surveys in multiple countries including long-term conservation monitoring to large-scale surveys to inform impact assessments of proposed developments. Appropriate Assessment, EIA & EcIA: Experience completing AA, EIA and EcIA deliverables for considerable number of projects across various sectors, including SHDs, national infrastructure projects, extractive industry, battery storage and power infrastructure. Habitat Surveying and Mapping: Proficient in habitat surveying to Fossitt level 3 and producing required mapping. Bat Surveying: Experience in emergence, activity and roost assessment surveys to inform impact assessments.
Licenses Held	Full Irish Driving License Ringing experience

Issue Date: 7 March 2022

Winter Bird Survey Report

Dundrum

Prepared for: TPA

By: Flynn Furney Environmental Consultants

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1. INTRODUCTION

1.1 This Report

Flynn Furney Environmental Consultants have been commissioned by TPA to carry out bird survey work at a site in Dundrum, Co. Dublin. These surveys were carried out over winter months in 2021 and 2022. The purpose of these surveys was to complete a suite of surveys previously carried out by consultants MKO during winter months in 2020 and 2021 and to compare results from the present survey with the previous work.

1.2 Site under Survey

The site under survey comprises the grounds of the Central Mental Hospital at the townland of Churchtown, Co. Dublin, c. 0.5 km north of Dundrum Village. The centre of the site is at 717162 729156 (ITM). The site contains a number of hospital and associated buildings as well as extensive green areas which include lawns, playing fields and a small amount of pasture. The site location is shown graphically in Appendix A. Given the sensitive nature of the site, the surveyor did not take any photographs during survey.

1.3 Statement of Authority

The survey work was carried out by Eric Dempsey. Eric has around 40 years' experience in ornithology and is a leading authority on Irish birds. He is the author of 8 books on Irish birds including the *Complete Field Guide to Irish Birds*. He is a listed Heritage Expert with The Heritage Council.

The report was written by Billy Flynn. Billy is a Chartered Environmental Scientist and Ecologist with over 20 years' experience. He has worked on a wide range of projects including national infrastructure such as motorway and rail projects. He is Lead Ecologist on a number of ongoing survey projects including greenways, lakes and sites of heritage significance.

2. METHODOLOGY

2.1 Desk Study

A review of the reporting by consultants MKO (2021) was carried out. A review of Irish Wetland Birds data (IWeBS) records as reported in the above was also carried out as well as a review of the Special Conservation Interests (SCIs) of the Special Protection Areas (SPAs) within the zone of influence (ZOI) of the project as identified by MKO.

As detailed in the above reporting, there are several SPAs within the possible zone of influence of the site under survey. These are shown in Appendix A. Species that are Special Conservation Interests of the SPAs were specifically targeted by the survey as were birds of greatest conservation concern (the 'Red Listed' species, see Gilbert et al., 2021) and any other birds that are on Annex I of the EU Birds Directive.

2.2 Field Survey

2.2.1 Vantage Point Surveys

Field survey methodology followed that utilised by MKO (2021). Vantage Point surveys as detailed by Bibby et al. (2000) were carried out. As per the previous MKO work, these were carried out from 3 no. points within the grounds of the site. They were chosen for the maximum field of view of the grassland areas of the site. Surveys were undertaken over 2 no. 3 hour periods (morning & afternoon) which includes a 2-hour period either side of the high tide on these days. This would capture the time period when the target species of the SPAs would be most likely to utilise the site at Dundrum.

2.2.2 Walkover/Habitat Surveys

A walkover survey of the site was carried out in order to confirm the location, character and extent of habitats as recorded in the survey by MKO (2021). Further, more targeted walkover surveys were carried out throughout the duration of the project in order to identify droppings of target species birds (e.g. geese) within the grassland areas of the site.

2.2.3 Survey Effort

Surveys as described above were carried out at Dundrum between 24 November 2021 and 28 February 2022. This amounted to 7 no. survey days of 6 hour's duration, a total of 42 hours survey time.

3. RESULTS

3.1 Vantage Point Surveys

The results of the target species recorded during surveys undertaken between November 2021 and January 2022 are summarised in the table below:

Table 1. Total of hourly peak species counts for each species recorded.

Species	Conservation status	November	December	January	February
Black-headed Gull	Greatest Conservation Concern (Red list)	7	64	45	29
Herring Gull	Greatest Conservation Concern (Red List)	20	136	106	161
Common Gull	Medium Conservation Concern (Amber List)	0	9	0	0
Little Egret	Least Conservation Concern (Green List), Annex I Species	0	1	0	0

Table 2. Peak species counts for each species recorded.

Species	Conservation status	November	December	January	February
Black-headed Gull	Greatest Conservation Concern (Red list)	2	11	8	7
Herring Gull	Greatest Conservation Concern (Red List)	5	51	19	36
Common Gull	Medium Conservation Concern (Amber List)	0	5	0	0
Little Egret	Least Conservation Concern (Green List), Annex I Species	0	1	0	0

3.2 Walkover / Habitat Surveys

The results of the walkover survey and habitat description are summarised in the table below.

Table 3. Species composition per month

Month	Grass	Forb	Bare Ground
	(approximate % surface area)		
November	>90	<10	<1
December	>90	<10	<1
January	>90	<10	<1
February	>90	<10	<1

The results of the search for droppings of geese are shown in the table below.

Table 4. Droppings found per month

Month	No of Droppings
November	0

December	0
January	0
February	0

4. DISCUSSION

This section of the report summarises the results of the surveys carried out between 24 November 2021 and 28 February 2022. The results may be seen in full in Appendix B of this report.

A total of four of the target species were recorded foraging or roosting within site proposed for development. These were: Herring Gull *Larus argentatus*, Black-headed Gull *Larus ridibundus,* Common Gull *Larus canus* and Little Egret *Egretta garzetta*.

Of these, Herring Gull was recorded in greatest numbers. The highest peak count for this species being 51 no. on the 8 December 2021. Of the above, Black-headed Gull is the only Special Conservation Interest (SCI) species of any of the SPAs within the likely zone of influence (ZOI) of the project.

No Curlew *Numenius arquata* were recorded utilising the site. In conversation with members of grounds staff, the ornithologist was told that Curlew has occasionally been seen within the site but not in "recent" times. Brent Goose was not recorded within the survey period.

The habitat surveys carried out were largely in line with the results of the MKO surveys (2021) which showed a dominance of grass species (>90%) across the areas surveyed and non-grass species (forbs) being consistently less than 10% of surface area. The grass was seen to be well-maintained throughout the site and areas of bare ground were rare (<1%). Consistent with the MKO survey, no droppings of any goose species were found during the survey period.

The findings of the bird surveys would indicate that there is only limited potential for disturbance or displacement of the SCI species of the SPAs within the ZOI arising from the proposed development. It is not predicted that the proposed development would result in any habitat loss of any significance to any SCI species. This is based upon the low numbers of the only SCI species recorded and the availability of similar habitat type (amenity grassland) within the immediate and wider areas.

Surveys of the site are ongoing at time of writing. It is recommended that the surveys are continued until the end of March (2022) as per the methodology of the present survey.

5. CONCLUSION

Of the target species of the bird survey, only one SCI species listed for the Special Protection Areas within the ZOI of the proposed development was recorded. This was Black-headed Gull. This species was also recorded in the previous survey by MKO (2021). Two other SCI species recorded in the previous survey (Curlew and Brent Goose) were not recorded within the survey period of this present survey.

No direct impacts to any of the SPAs within the ZOI may be expected. This is given the remove of these sites from the area proposed for development and the lack of connectivity between this and the protected sites. Indirect effects on the SPAs (e.g. on water quality) are considered unlikely given the nature of the proposed development and the lack of connectivity to these designated sites. As described in the MKO report, best practice design and site practice would prevent such impacts from arising.

While some disturbance and displacement impacts may occur to the SCI species recorded, this would not be deemed to be of potential significance. This is due to the habituation of this species to anthropogenic disturbance within the site and wider urban area and its likely habitation to any disturbance resulting from the proposed development.

Some loss of foraging habitat for this species will occur. However, this is not considered significant given the relative abundance of this habitat type (amenity grassland) within both the immediate and wider areas surrounding the site.

It is recommended that the ongoing surveys are continued until the end of March 2022.

6. REFERENCES

Print

Bibby, C.J., Burgess, N.D., Hill, D.A. and Mustoe, S (2000) *Bird Census Techniques*. Academic Press, London.

Gilbert, G, Stanbury, A, & Lewis, L (2021) Birds of Conservation Concern in Ireland 4: 2020 –2026. *Irish Birds 43:* 1—22.

MKO (2021) *Winter Bird Survey Report 2020/21. TPA Bird Surveys, Dundrum, Co. Dublin*. Unpublished report by MKO for TPA.

Web Resources

www.npws.ie National Parks and Wildlife Service: Designated site data and shapefiles.

www.birdwatchireland.ie & http: c0amf055.caspio.com: Species data and iWeBS (wetland birds) records.

Appendix A: Site Location & Designated Sites

Fig. 1. Site Location and Survey Area

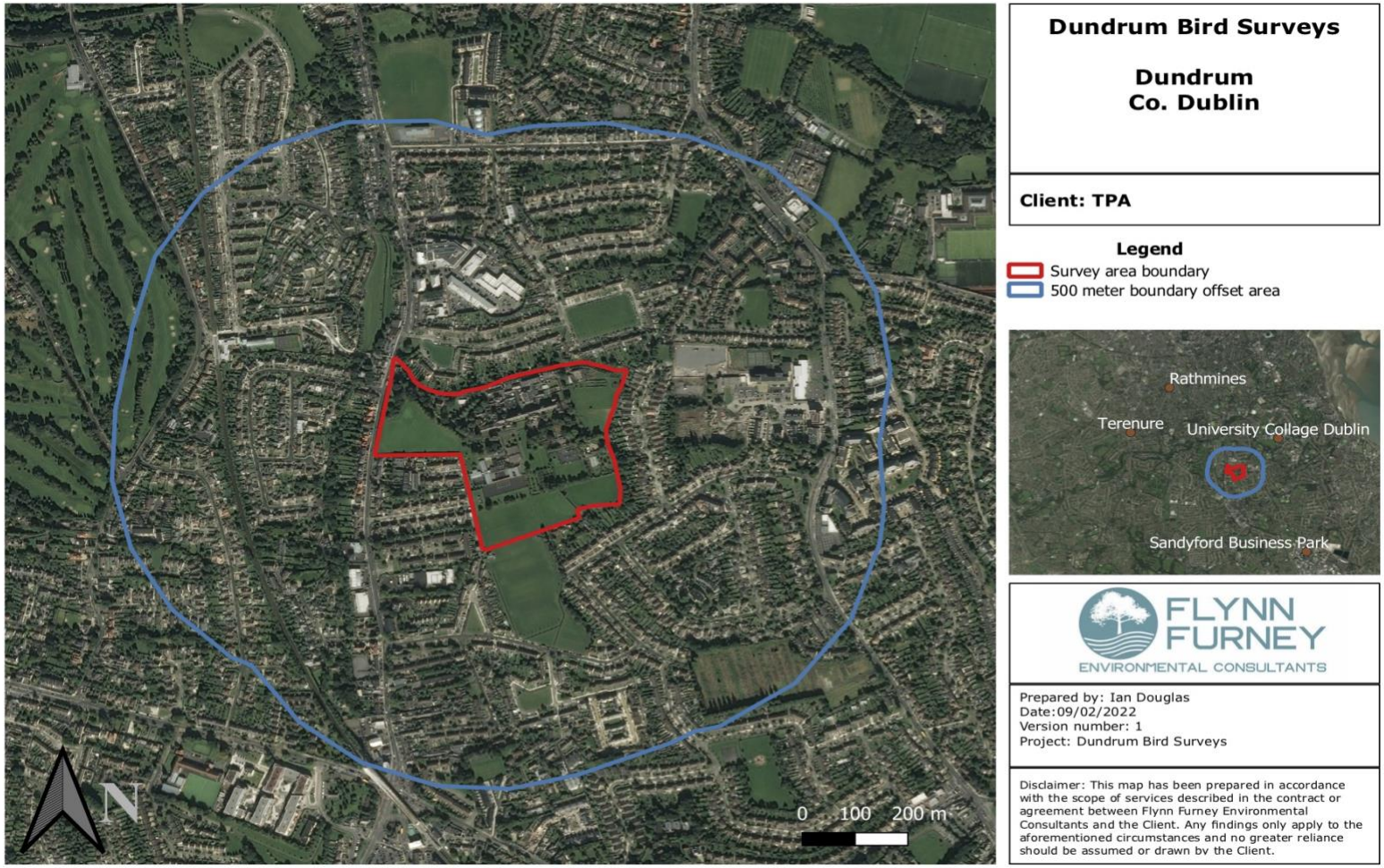
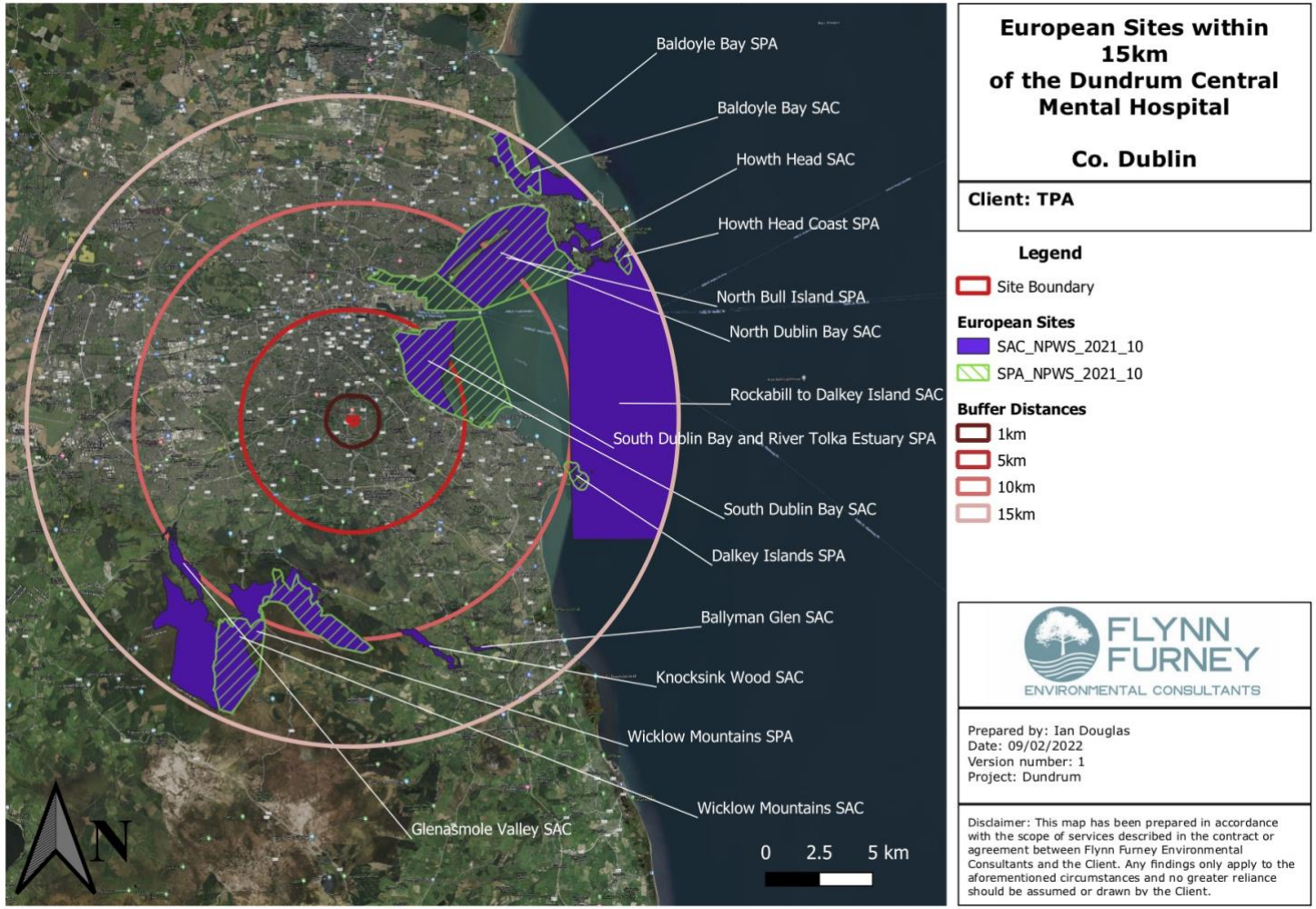


Fig. 2. Location of Natura 2000 sites within Likely Zone of Influence of Proposed Development



Appendix B: Survey Data

Dundrum Survey - 2021						Species - Peak Counts per hour											
Date	Observer	Start time	End time	BG	CU	OC	LB	BH	HG	CM	ET	BG droppings	Wind	Cloud	Precip	Vis	Dublin High Tide
24/11/2021	ED	10:30	11:30	0	0	0	0	2	3	0	0	N	3	3	1	5	14:25
24/11/2021	ED	11:30	12:30	0	0	0	0	2	2	0	0	N	3	3	1	5	14:25
24/11/2021	ED	12:30	13:30	0	0	0	0	0	5	0	0	N	3	3	1	5	14:25
24/11/2021	ED	13:30	14:30	0	0	0	0	0	5	0	0	N	3	3	1	5	14:25
24/11/2021	ED	14:30	15:30	0	0	0	0	2	2	0	0	N	3	3	1	5	14:25
24/11/2021	ED	15:30	16:30	0	0	0	0	1	3	0	0	N	3	3	1	5	14:25
08/12/2021	ED	09:55	10:55	0	0	0	0	8	12	4	0	N	7	3	3	5	14:18
08/12/2021	ED	10:55	11:55	0	0	0	0	11	12	5	0	N	7	3	3	5	14:18
08/12/2021	ED	11:55	12:55	0	0	0	0	7	4	0	0	N	7	3	3	5	14:18
08/12/2021	ED	12:55	13:55	0	0	0	0	5	8	0	1	N	7	3	3	5	14:18
08/12/2021	ED	13:55	14:55	0	0	0	0	2	6	0	0	N	7	3	3	5	14:18
08/12/2021	ED	14:55	15:55	0	0	0	0	3	51	0	0	N	7	3	3	5	14:18
22/12/2021	ED	09:40	10:40	0	0	0	0	6	3	0	0	N	4	3	2	5	13:24
22/12/2021	ED	10:40	11:40	0	0	0	0	2	0	0	0	N	4	3	2	5	13:24
22/12/2021	ED	11:40	12:40	0	0	0	0	0	4	0	0	N	4	3	2	5	13:24
22/12/2021	ED	12:40	13:40	0	0	0	0	5	2	0	0	N	4	3	2	5	13:24
22/12/2021	ED	13:40	14:40	0	0	0	0	9	3	0	0	N	4	3	2	5	13:24
22/12/2021	ED	14:40	15:40	0	0	0	0	7	31	0	0	N	4	3	2	5	13:24

British Trust for Ornithology Species Codes: BG-Brent Goose, CU-Curlew, OC-Oystercatcher, LB-Lesser Black-backed Gull, BH-Black-headed Gull, HG-Herring Gull, CM-Common Gull, ET-Little Egret.

Dundrum Survey - 2022						Species - Peak Counts per hour											
Date	Observer	Start time	End time	BG	CU	OC	LB	BH	HG	CM	ET	BG droppings	Wind	Cloud	Precip	Vis	Dublin High Tide
17/01/2022	ED	09:30	10:30	0	0	0	0	4	7	0	0	N	2	1	1	5	11:18
17/01/2022	ED	10:30	11:30	0	0	0	0	3	7	0	0	N	2	1	1	5	11:18
17/01/2022	ED	11:30	12:30	0	0	0	0	3	4	0	0	N	2	1	1	5	11:18
17/01/2022	ED	12:30	13:30	0	0	0	0	4	2	0	0	N	2	1	1	5	11:18
17/01/2022	ED	13:30	14:30	0	0	0	0	2	19	0	0	N	2	1	1	5	11:18
17/01/2022	ED	14:30	15:30	0	0	0	0	3	16	0	0	N	2	1	1	5	11:18
31/01/2022	ED	09:10	10:10	0	0	0	0	2	5	0	0	N	4	3	2	5	10:48
31/01/2022	ED	10:10	11:10	0	0	0	0	3	11	0	0	N	4	3	2	5	10:48
31/01/2022	ED	11:10	12:10	0	0	0	0	5	4	0	0	N	4	3	2	5	10:48
31/01/2022	ED	12:10	13:10	0	0	0	0	8	5	0	0	N	4	3	2	5	10:48
31/01/2022	ED	13:10	14:10	0	0	0	0	2	12	0	0	N	4	3	2	5	10:48
31/01/2022	ED	14:10	15:10	0	0	0	0	6	14	0	0	N	4	3	2	5	10:48

British Trust for Ornithology Species Codes: BG-Brent Goose, CU-Curlew, OC-Oystercatcher, LB-Lesser Black-backed Gull, BH-Black-headed Gull, HG-Herring Gull, CM-Common Gull, ET-Little Egret.

Dundrum Survey - 2022						Species - Peak Counts per hour											
Date	Observer	Start time	End time	BG	CU	OC	LB	BH	HG	CM	ET	BG droppings	Wind	Cloud	Precip	Vis	Dublin High Tide
15/02/2022	ED	09:10	10:10	0	0	0	0	0	7	0	0	N	3	3	1	5	11:18
15/02/2022	ED	10:10	11:10	0	0	0	0	0	3	0	0	N	3	3	1	5	11:18
15/02/2022	ED	11:10	12:10	0	0	0	0	0	0	0	0	N	3	3	1	5	11:18
15/02/2022	ED	12:10	13:10	0	0	0	0	1	5	0	0	N	3	3	1	5	11:18
15/02/2022	ED	13:10	14:10	0	0	0	0	3	9	0	0	N	3	3	1	5	11:18
15/02/2022	ED	14:10	15:10	0	0	0	0	5	13	0	0	N	3	3	1	5	11:18
28/02/2022	ED	08:50	09:50	0	0	0	0	3	17	0	0	N	3	4	2	5	09:50
28/02/2022	ED	09:50	10:50	0	0	0	0	0	6	0	0	N	3	4	2	5	09:50
28/02/2022	ED	10:50	11:50	0	0	0	0	0	14	0	0	N	3	4	2	5	09:50
28/02/2022	ED	11:50	12:50	0	0	0	0	4	22	0	0	N	3	4	1	5	09:50
28/02/2022	ED	12:50	13:50	0	0	0	0	7	36	0	0	N	3	4	1	5	09:50
28/02/2022	ED	13:50	14:50	0	0	0	0	6	29	0	0	N	3	4	2	5	09:50

British Trust for Ornithology Species Codes: BG-Brent Goose, CU-Curlew, OC-Oystercatcher, LB-Lesser Black-backed Gull, BH-Black-headed Gull, HG-Herring Gull, CM-Common Gull, ET-Little Egret.

Bat Fauna Survey for a proposed Strategic Housing Development (SHD) on the lands at the Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14.



14th March, 2022

Prepared by: Bryan Deegan (MCIEEM) of Altemar Ltd.
On behalf of: Land Development Agency

Altemar Ltd., 50 Templecarrig Upper, Delgany, Co. Wicklow. 00-353-1-2010713. info@altemar.ie
Directors: Bryan Deegan and Sara Corcoran
Company No.427560 VAT No. 9649832U
www.altemar.ie

SUMMARY

Structure:	The subject site consists of a number of treelines, hedgerows, open grassland, car park spaces, community garden, and structures facilitating the Central Mental Hospital. The site is currently in use. Buildings are brightly lit with security lighting.
Location:	Dundrum Road, Dundrum, Dublin 14.
Bat species present:	None Roosting within buildings. A single Leislers bat/ Lesser Noctule (*Nyctalus leisleri*) was noted emerging from a tree on site. Lesser Noctule (*Nyctalus leisleri*), Common Pipistrelle (*Pipistrellus pipistrellus*) and Soprano Pipistrelle (*Pipistrellus pygmaeus*) were noted foraging on site.
Proposed work:	Proposed Strategic Housing Development (SHD).
Impact on bats:	Consultation has taken place in relation to the potential impact of lighting on foraging. The proposed lighting has been modified to allow for foraging activity to continue on site. A pre-construction survey of buildings and trees will be carried out. A derogation licence will be required for the felling of tree associated with the bat roost on site. The presence of new buildings on site will alter the local environment but, foraging will continue on site. The impact is deemed to be low adverse/negative/long term/not significant.
Survey by:	Bryan Deegan MCIEEM
Survey dates:	13th August 2020, 21st August 2020, 10th August 2021 & 12th October 2021.

Receiving Environment

Background

The Land Development Agency intend to apply to An Bord Pleanála (the Board) for a 10 year permission for a Strategic Housing Development with a total application site area of c.9.6 ha, on lands at the Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14.

The development will consist of the demolition of existing structures (3,736 sq m), including:

- Single storey Former swimming pool / sports hall and admissions unit (2,750 sq m);
- Two storey redbrick building (305 sq m);
- Temporary structures including single storey portacabins (677 sq m);
- Removal of security fence at Dundrum Road entrance;
- Demolition of element of Gatelodge (4 sq m).

The development will also consist of alterations and partial demolition of the perimeter wall, including:

- Removal of section of perimeter wall adjacent to Rosemount Green (south);
- Formation of a new opening in perimeter wall at Annaville Grove to provide a pedestrian and cyclist access and associated gate;
- Removal of section of perimeter wall at the existing Dundrum Road access;
- Alterations and removal of sections of wall adjacent to Dundrum Road, including the provision of a new vehicular, cyclist and pedestrian access;
- Alterations and removal of section of perimeter wall adjacent to Mulvey Park to provide a pedestrian and cyclist access; and
- Removal of walls adjacent to Main Hospital Building.

The development with a total gross floor area of c. 106,770 sq m (c. 106,692 sq m excluding retained existing buildings), will consist of 977 no. residential units comprising:

- 940 no. apartments (consisting of 53 no. studio units; 423 no. one bedroom units; 37 no. two bedroom (3 person) units; 317 no. two bedroom (4 person) units; and 110 no. 3 bedroom units) arranged in 9 blocks (Blocks 02-10) ranging between 2 and 6 storeys (excluding plant) in height, together with private (balconies and private terraces) and communal amenity open space provision (including courtyards and roof gardens) and ancillary residential facilities;
- 17 no. duplex apartments (consisting of 3 no. 2 bedroom units and 14 no. 3 bedrooms units located at Block 02, 08 and 09), together with private balconies and terraces.
- 20 no. two and three storey houses (consisting of 7 no. three bedroom units and 13 no. 4 bedrooms units) and private rear gardens located at Block 02, 08 and 09).

The development will also consist of 3,889 sq m of non-residential uses, comprising:

- Change of use and renovation of existing single storey Gate Lodge building to provide a café unit (78 sq m);
- 1 no restaurant unit (307 sq m) located at ground floor level at Block 03;
- 6 no. retail units (1,112 sq m) located at ground floor level at Blocks 03, 06 and 07;
- 1 no. medical unit (245 sq m) located at ground floor level at Block 02;
- A new childcare facility (463 sq m) and associated outdoor play area located at ground floor level at Block 10; and
- A new community centre facility, including a multi-purpose hall, changing rooms, meeting rooms, storage and associated facilities (1,684 sq m) located at ground and first floor level at Block 06.

The development will also consist of the provision of public open space and related play areas; hard and soft landscaping including internal roads, pathways and boundary treatments, wetland feature, part-basement, car parking (547 no. spaces in total, including car sharing and accessible spaces); motorcycle parking; electric vehicle charging points; bicycle parking (long and short stay spaces including stands); ESB substations, piped infrastructural services and connections; plant (including external plant for district heating and pumping station); waste management provision; SuDS measures; sustainability measures (including green roofs and solar panels); signage; public lighting; any making good works to perimeter wall and all site development and excavation works above and below ground.

The proposed site outline, location, and layout are demonstrated in Figures 1 & 2.



Figure 1. *Proposed site outline and location*



Figure 2. *Proposed site plan*

Landscape

The Dundrum Central SHD Landscape Architecture & Public Realm Design Report has been prepared by AECOM to accompany this planning application. Altemar has consulted with AECOM specifically in relation to the proposed landscaping strategy and providing planting that encourages insects and bat foraging on site.

This report also outlines the following in relation to the soft landscaping plan:

'*The overall planting approach is focused on creating a rich and biodiverse planting footprint in the context of a significant re-development of the site. The removal of existing hedgerows and grassland is offset by the addition of pollinator friendly wildflower meadows, tree planting and mixed native woodland along the Eco Corridor and in the community park south of the site. All retained tree and hedgerow protection measures will be in accordance with the mitigation recommendations prescribed in the ecologists and arborist report.*'

In addition: '*All open spaces will be multi-functional, catering for the needs of people, as well as the natural environment, supporting habitat creation, the growing of trees, plants and food. A strong SuDs management Train with collection, conveyance and storing components will not only provide a key blue infrastructure on site but establish new habitats and enhance biodiversity throughout the development. These key components include Green Roofs, Bio retention systems/raingardens, permeable paving, drainage ditches, tree planting and the formation of a integrated constructed wetland in the community park of the development. The integration of these elements in the scheme will not only improve the surface water drainage of the site but improve the surrounding environment and aid climate change mitigation.' 'Dundrum Central SHD contains existing natural assets such as the parkland entrance of mature trees, the walled garden. Other assets and future landscape such as wetland areas can become important educational tools for local children visiting the site, learning about the natural environment, nature and local heritage*.' There are numerous strategies to enhance biodiversity on site including the 'Elm Park Eco-Corridor' which '*will provide an important habitat corridor on site. The area already contains some semi-mature trees which will be retained, a ditch and some wet grassland areas. The area can be significantly improved, and the areas of wetland habitat increased which will benefit a wide variety of plant and animal species including bats. It will also be designed to provide educational tools/information which can be used by local school children as well as adults, to gain greater understanding of the natural world*.' In addition to the elements above, scented climbers and fruit trees have been included. The proposed landscape layout – overall plan is demonstrated in Figure 3.

Lighting

A Public Lighting Report has been prepared by EDC – Mechanical & Electrical Consulting Engineers to accompany this planning application. The proposed lighting layout is demonstrated in Figure 4. Discussions took place with the engineers and Altemar to provide bat foraging areas with reduced light spill and low-level light fittings and bollards. This report outlines the following proposed lighting layout report and horizontal illuminance (lux) for the subject site. It should be noted that the values provided are for ground level. This would overestimate the light levels in the areas where bats would borage above the light fittings.



AECOM

PROJECT

Dundrum Central SHD

Proposed SHD on lands at the Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14.

CLIENT

LDA Ghníomhaireacht Forbartha Talún Land Development Agency

CONSULTANT

AECOM Ireland Limited
24 Lower Hatch Street
Dublin 2, D02 TY68
01 676 3671 tel
www.aecom.com/ie

LEGEND

Refer to Planting Schedules for Proposed Softscape Species)

- Hospital Planning Application
- Existing Trees Retained
- Existing Trees Removed
- Proposed Parkland Trees
- Proposed Street Trees
- Proposed Feature Trees
- Proposed Fruit Trees
- Amenity Lawn
- Meadow Grass
- Shrubs and Ground Covers
- Raingarden / Bioretention
- Woodland Mix
- Parkland Paving Resin Bound Gravel
- Footpath Exposed Aggregate Concrete
- Feature Plaza Paving Mixed Unit Granite Setts
- Plaza Paving Small Unit Precast Concrete
- Privacy & Courtyard Paving Small Unit Precast Concrete
- Cycle Way HRA with Coloured Chipping
- Shared Surface & Raised Table HRA with Coloured Chipping
- Play Area Play Mulch
- Integrated Constructed Wetland

ISSUE/REVISION

I/R	DATE	DESCRIPTION
A	22-03-11	ISSUE FOR PLANNING

0 25 50 m
1:1000 @A1

N

PROJECT NUMBER

60588099

SHEET TITLE

LANDSCAPE LAYOUT
OVERALL PLAN

SHEET NUMBER

DSRM-ACM-00-ST-DR-L-1000

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Figure 3. Landscape layout – overall plan



Figure 4. Public lighting layout

Arborist

An Arboricultural Assessment has been prepared by Arborist Associates Ltd. to accompany this planning application. This report outlines the following in relation to tree loss on-site:

'***In summary**, 169 of the 299 No. Trees assessed and included within our condition assessment within 'Appendix 2' are proposed for removal to facilitate the proposed development. This equates to 56.5% of the overall tree population. It will also be necessary to remove 13No. Hedges and one Fruit Orchard.*

The trees to be removed are made up of the following category grades:

- *18No. of the 19 category 'U' trees = 94.7%*
- *12No. of the 46 Category 'A' trees = 26.0%*
- *17No. of the 57 Category 'B' trees =29.8%*
- *122No. of the 177 Category 'C' trees = 68.9%*

From the above list of trees shown for removal, it is proposed to try and retain some of these trees, such trees as Tree Nos.0340, 0341 & 0362 within the completed development, but due to the uncertainty at present regarding the feasibility of retaining them successfully without impact, they are being shown for removal as part of the planning application. Once the development in these areas starts on site, the works around these trees will be reviewed to see if any additional mitigation measures can be put in place to reduce the impact of the development to the point where the retention of these trees is feasible for at least the medium term until tree planting added as part of the landscaping becomes established and starts to contribute to the treescape of the area.

The loss of the above tree vegetation has been mitigated against as much as possible with the retention of a lot of the more prominent trees on these grounds and in particular the main groups of trees around the front of the existing buildings and on the entrance avenue which will help screen and blend the proposed development into its surrounds.

Tree planting is being added as part of the landscaping which will complement the development and its incorporation into the surrounding area. It will also help to provide good quality and sustainable long-term tree cover and as it establishes and grows in size, it will be continuously mitigating any negative impacts created with the loss of the existing tree vegetation to facilitate the proposed development. See landscape architects drawings and schedules for detail.

The design of the landscape areas within the completed development has focused on tree, hedge and shrub planting as mitigation for the existing tree, hedge and shrub vegetation loss. A mix of tree species, forms and sizes including the use of semimature trees will form a strong and unifying element to the landscape areas.

The Planting Strategy key factors are to:

- *Create a sense of identity using trees, shrub and hedge planting*
- *Create a robust landscape that performs all year round and is suitable for the current proposed use of these grounds*
- *To use vegetation to screen and enhance views*
- *To use a more diverse mix of plant species that provides forage for pollinators*
- *Plant robust species that tolerate drought and site-specific micro-climates*
- *Plant species that are maintenance friendly.'*

An Arboricultural Impact Assessment, Tree Constraints Plan, and Tree Protection Plan have been prepared by Arborist Associates Ltd. to accompany this planning application. These are demonstrated in Figures 5 - 7 below.

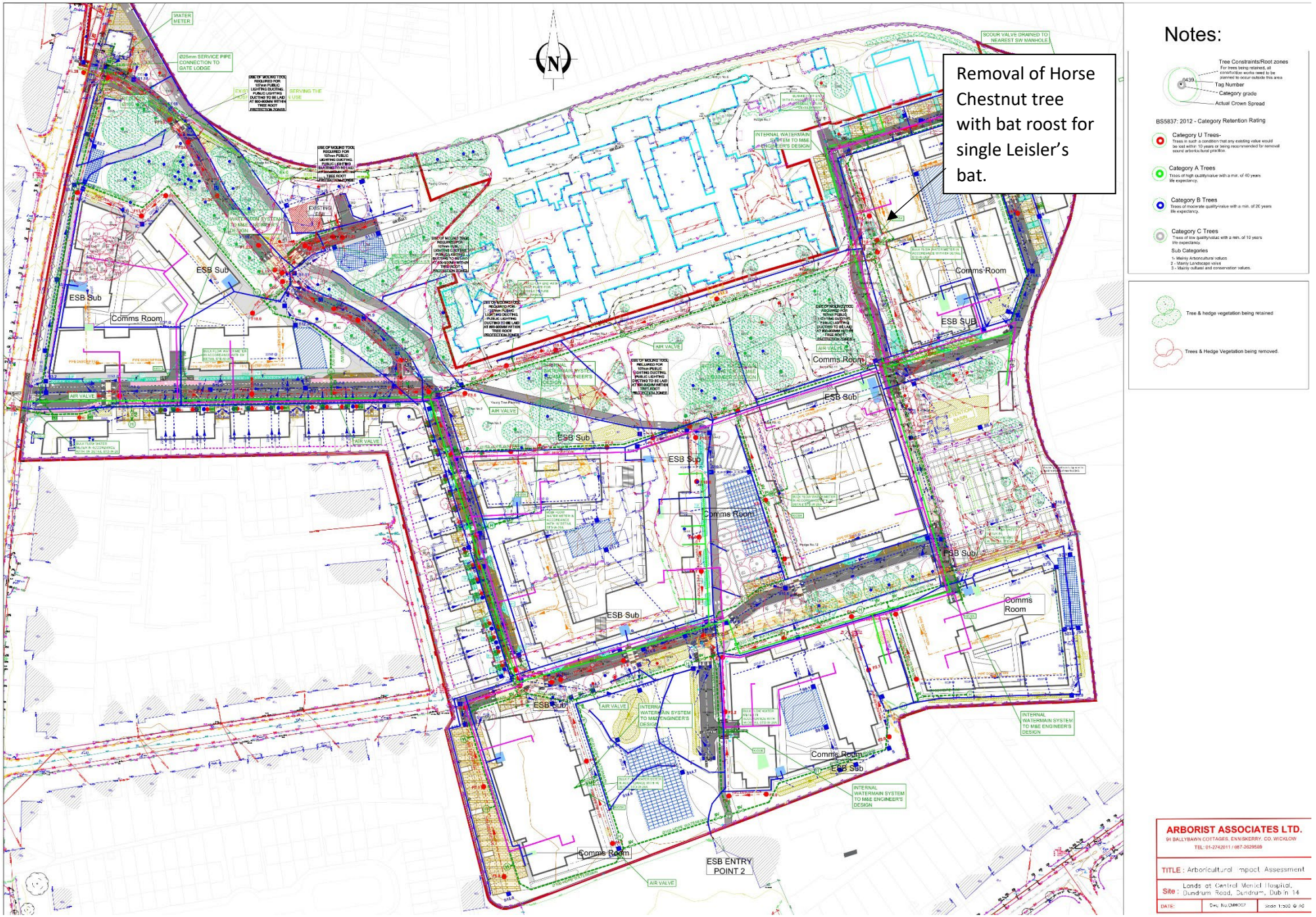


Figure 5. Arboricultural Impact Assessment



Figure 6. Tree constraints plan



Figure 7. Tree protection plan

Competency of Assessor

This report has been prepared by Bryan Deegan MSc, BSc (MCIEEM). Bryan has over 27 years of experience providing ecological consultancy services in Ireland. He has extensive experience in carrying out a wide range of bat surveys including dusk emergence, dawn re-entry and static detector surveys. He also has extensive experience reducing the potential impact of projects that involve external lighting on Bats. Bryan trained with Conor Kelleher author of the Bat Mitigation Guidelines for Ireland (Kelleher and Marnell (2007)) and Bryan is currently providing bat ecology (impact assessment and enhancement) services to Dun Laoghaire Rathdown County Council primarily on the Shanganagh Park Masterplan. The desk and field surveys were carried out having regard to the guidance: Bat Surveys for Professional Ecologists – Good Practice Guidelines 3rd Edition (Collins, J. (Ed.) 2016) and Kelleher and Marnell (2007), Bat Mitigation Guidelines for Ireland.

Legislative Context

Wildlife (Amendment) Act 2000.

Bats in Ireland are protected by the Wildlife (Amendment) Act 2000. Based on this legislation it is an offence to wilfully interfere with or destroy the breeding or resting place of any species of bat. Under this legislation it is an offence to "*Intentionally kill, injure or take a bat, possess or control any live or dead specimen or anything derived from a bat, wilfully interfere with any structure or place used for breeding or resting by a bat, wilfully interfere with a bat while it is occupying a structure or place which it uses for that purpose. "*

Habitats Directive- Council Directive 92/43/EEC 1992 on the conservation of natural habitats and of wild fauna and flora transposed into Irish Law i.e. European Communities (Natural Habitats) Regulations, 1997 (SI No. 64/1997).

Annex II of the Council Directive 92/43/EEC 1992 on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) lists animal and plant species of Community interest, the conservation of which requires the designation of Special Areas of Conservation (SACs); Annex IV lists animal and plant species of Community interest in need of strict protection. All bat species in Ireland are listed on Annex IV of the Directive, while the Lesser Horseshoe Bat (*Rhinolophus hipposideros*) is protected under Annex II which related to the designation of Special Areas of Conservation for a species.

Under section 23 of SI No. 64/1997 all bats are listed under the first schedule of Section 23 which makes it an offence to:

- deliberately capture a bat
- deliberately disturb a bat,
- damage or destroy a breeding site or resting place of a bat.

Bat survey

This report presents the results of four bat hand held emergent and detector surveys (13th August 2020, 21st August 2020, 10th August 2021 & 12th October 2021), three static detector surveys and building inspection surveys undertaken by Bryan Deegan (MCIEEM) over 2020 and 2021. Three static detector surveys were carried out. Site treelines were also assessed for bat roosting potential. Each of the buildings present on site were examined for signs of bat roosting and foraging. Bat detector and emergent detector survey used an Echo Meter Touch 2 Pro in addition to a *Batbox Duet* heterodyne/frequency division detector to determine bat activity. In addition, an Anabat Express Passive Bat Detector was used for the static detector surveys.

Tree Roosting Potential Survey

The survey on 10th August 2021 also highlighted trees of bat roosting potential on site. In relation to bat roosting potential, the site comprised of buildings, large fields surrounded by mature hedgerows and treelines. A derogation licence is not required to fell the trees of roosting potential, as no bat were actually observed emerging from the trees. However, it recommended that a pre-construction survey is carried out and the trees are studied in detail to ensure that roosts are not present at the time of felling, if required. If a bat roost is found to be present during the pre-construction survey the tree must not be felled until a derogation licence had been granted and the a bat specialist has approved the felling post mitigation.

Survey constraints

The detector surveys were all undertaken during the active bat season. Weather conditions were good with temperatures greater than 10°C. Winds were light and there was no rainfall during the surveys.

Bat assessment findings

Review of local bat records

The review of existing bat records (sourced from Bat Conservation Ireland's National Bat Records Database) within a 2km^2 grid (Reference grid O12U) encompassing the study area reveals that three of the nine known Irish species have been observed locally (Table 1). The National Biodiversity Data Centre's online viewer was consulted in order to determine whether there have been recorded bat sightings in the wider area. This is visually represented in Figures 8 - 11. The following species were noted in the wider area: Brown Long-eared Bat (*Plecotus auritus*), Daubenton's Bat (Myotis daubentonii), Natterer's Bat (*Myotis nattereri*), Whiskered Bat (*Myotis mystacinus*), Lesser Noctule (*Nyctalus leisleri)*, Soprano Pipistrelle (*Pipistrellus pygmaeus*), and Pipistrelle (*Pipistrellus pipstrellus sensu lato*) (Soprano and common pipistrelle aggregate) (Figures 6 - 9).

Table 1. *Bat species recorded within Reference Grid O12U*

Species name	Record count	Date of last record
Lesser Noctule (*Nyctalus leisleri*)	2	04/09/2003
Pipistrelle (*Pipistrellus pipistrellus sensu lato*)	3	15/04/2011
Soprano Pipistrelle (*Pipistrellus pygmaeus*)	3	15/04/2011



Figure 8. Daubenton's Bat (*Myotis daubentonii*) (purple), Brown Long-eared Bat (*Plecotus auritus*), and both Daubenton's Bat and Brown Long-eared Bat (orange) (Source NBDC) (Site – red circle)

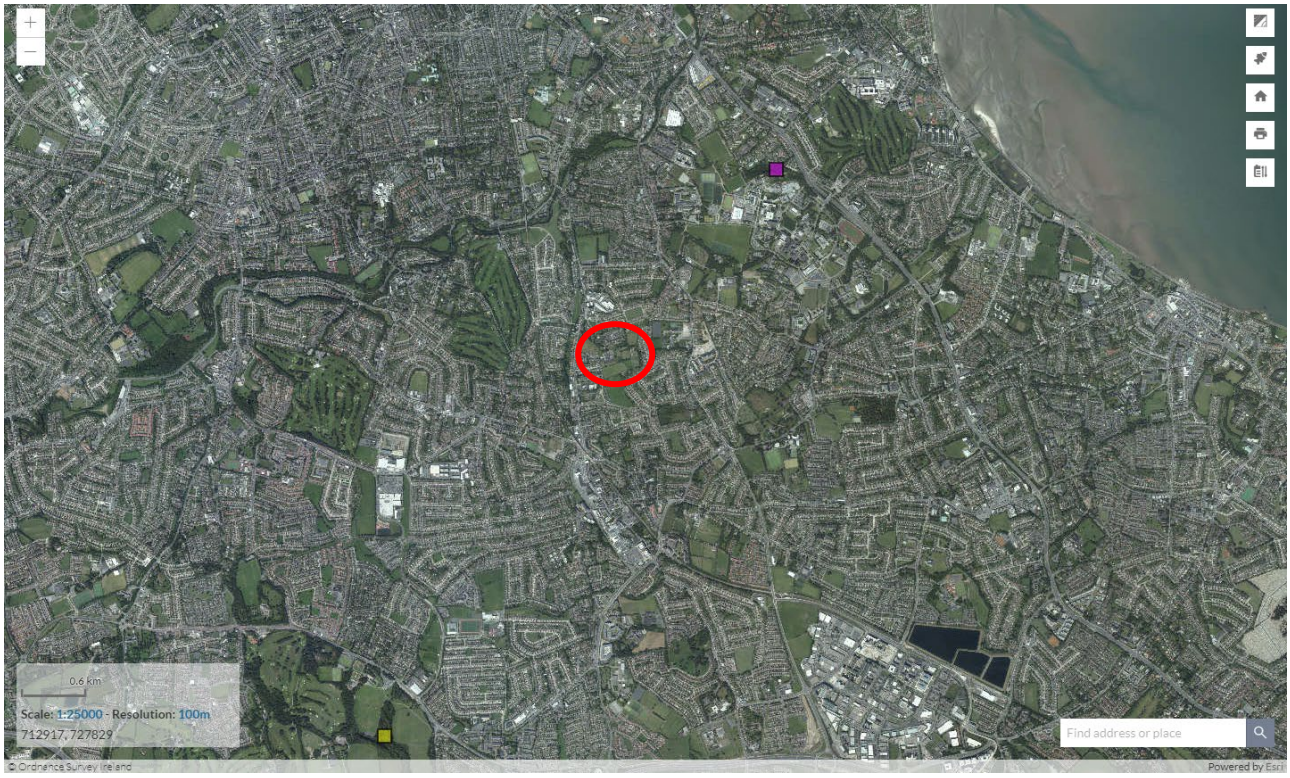


Figure 9. Natterer's Bat (*Myotis nattereri*) (purple) and Whiskered Bat (*Myotis mystacinus*) (yellow) (Source NBDC) (Site – Red circle)



Figure 10. Lesser Noctule (*Nyctalus leisleri*) (yellow) (Source NBDC) (Site – Red circle)



Figure 11. Pipistrelle (*Pipistrellus pipistrellus sensu lato*) (yellow) (Species aggregate), Soprano Pipistrelle (*Pipistrellus pygmaeus*) (purple), and both Pipistrelle and Soprano Pipistrelle (orange) (Source NBDC) (Site – red circle)

Specifically, NBDC records show sightings of bat species in locations that are in close proximity to the subject site:

1. Soprano Pipistrelle (*Pipistrellus pygmaeus)* in grid reference O176292. Recorded on 15/04/2011 and located 160m East of the subject site.
2. Pipistrelle (*Pipistrellus pipistrellus sensu lato)* in grid reference O176292. Recorded on 15/04/2011 and located 160m East of the subject site.

Detector survey

Bat activity was relatively low. As seen in Figure 12, bat activity on site was concentrated in the darker areas of the site away from the brightly lit buildings. Three species were noted foraging on site:

- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)
- Lesser Noctule (*Nyctalus leisleri*)

No evidence of bat activity was noted in the buildings on site. No bats emerging onsite buildings were noted. However, a single Leisler's bat was observed bat was emerging from a Horse Chestnut (Tree 0401) on the eastern section of the site. Foraging activity Common pipistrelle (*Pipistrellus pipistrellus*), Soprano pipistrelle (*Pipistrellus pygmaeus*), Lesser Noctule (*Nyctalus leisleri*) were also noted on site. The removal of the trees on site will result in a loss of foraging areas and a potential loss in bat roosts



Figure 12. Bat activity on site. Location of static defectors (2 yellow circles). Orange circle (bat roost & 3rd Static detector), Yellow line- Sorpano pipistrelle, orange line-common pipistrelle and blue line Leisler's bat.

Potential impacts of proposed redevelopment on bats

No bats emerging onsite buildings were observed. No evidence of bat activity was noted within the buildings on site. Foraging activity was relatively low. The site is brightly lit with security lighting and construction lighting could reduce foraging on site. Trees on site have the potential for bat roosting and a bat roost was noted within one tree. The removal of large trees on site will result in the loss of at least one bat roost in addition to reducing the sites foraging potential. However, in proximity to the existing buildings on site lighting will be reduced from current levels of floodlighting and it would be expected that bats would continue to forage on site particularly in the darker open space areas.

Mitigation measures

A pre-construction inspection of trees to be felled will be carried out. A derogation licence will be acquired for acquired for the Horse Chestnut (Tree 0401) and additional trees if bat roosts are present (Application Attached in Appendix 8.3.1). Light spill from the public lighting has been designed to be sensitive to bats and bat foraging and will follow the Bat Conservation Ireland "Bats & Lighting Guidance Notes for: Planners, engineers, architects and developers (December 2010). Landscaping has also been designed to include bat friendly plants including trees and climbers to attract insects. The project ecologist will ensure that lighting during construction is not directed towards trees on site. A post construction assessment of the light spill on site will be carried to ensure conformity with the low light levels predicted from the light spill analysis. Ten bat boxes will be places on site.

Predicted and residual impact of the proposal

No bats were roosting in buildings on site. A bat roost within a Horse Chestnut tree will be lost. Foraging activity within the darker areas of the site may be reduced due to the presence new buildings and lighting. It would be expected that with a sensitive light strategy foraging activity in the vicinity of the existing buildings on site would increase. A pre construction, inspection will be carried out on onsite trees with bat roosting potential, that are to be removed. The proposed development will result in a long term/low adverse/not significant/negative impacts on bats.

Legal status and conservation issues – bats

All Irish bat species are protected under the Wildlife Act (1976) and Wildlife Amendment Acts (2000 and 2010). Also, the EC Directive on The Conservation of Natural habitats and of Wild Fauna and Flora (Habitats Directive 1992), seeks to protect rare species, including bats, and their habitats and requires that appropriate monitoring of populations be undertaken. All Irish bats are listed in Annex IV of the Habitats Directive and the lesser horseshoe bat *Rhinolophus hipposideros* is further listed under Annex II. Across Europe, they are further protected under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982), which, in relation to bats, exists to conserve all species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) was instigated to protect migrant species across all European boundaries. The Irish government has ratified both these conventions.

All Irish bats are listed in Annex IV of the Habitats Directive and the lesser horseshoe bat is further listed under Annex II.

The current status and legal protection of the known bat species occurring in Ireland is given in the following table.

Common and scientific name	Wildlife Act 1976 & Wildlife (Amendment) Acts 2000/2010	Irish Red List status	Habitats Directive	Bern & Bonn Conventions
Common pipistrelle *Pipistrellus pipistrellus*	Yes	Least Concern	Annex IV	Appendix II
Soprano pipistrelle *P. pygmaeus*	Yes	Least Concern	Annex IV	Appendix II

Common and scientific name	Wildlife Act 1976 & Wildlife (Amendment) Acts 2000/2010	Irish Red List status	Habitats Directive	Bern & Bonn Conventions
Nathusius pipistrelle *P. nathusii*	Yes	Not referenced	Annex IV	Appendix II
Leisler's bat *Nyctalus leisleri*	Yes	Near Threatened	Annex IV	Appendix II
Brown long-eared bat *Plecotus auritus*	Yes	Least Concern	Annex IV	Appendix II
Lesser horseshoe bat *Rhinolophus hipposideros*	Yes	Least Concern	Annex II Annex IV	Appendix II
Daubenton's bat *Myotis daubentonii*	Yes	Least Concern	Annex IV	Appendix II
Natterer's bat *M. nattereri*	Yes	Least Concern	Annex IV	Appendix II
Whiskered bat *M. mystacinus*	Yes	Least Concern	Annex IV	Appendix II
Brandt's bat *M. brandtii*	Yes	Data Deficient	Annex IV	Appendix II

Also, under existing legislation, the destruction, alteration or evacuation of a known bat roost is a notifiable action and a derogation licence has to be obtained from the *National Parks and Wildlife Service* before works can commence.

It should also be noted that any works interfering with bats and especially their roosts, including for instance, the installation of lighting in the vicinity of the latter, may only be carried out under a licence to derogate from Regulation 23 of the Habitats Regulations 1997, (which transposed the EU Habitats Directive into Irish law) issued by NPWS. The details with regards to appropriate assessments, the strict parameters within which derogation licences may be issued and the procedures by which and the order in relation to the planning and development regulations such licences should be obtained, are set out in Circular Letter NPWS 2/07 "*Guidance on Compliance with Regulation 23 of the Habitats Regulations 1997 - strict protection of certain species/applications for derogation licences*" issued on behalf of the Minister of the Environment, Heritage and Local Government on the 16th of May 2007.

Furthermore, on 21st September 2011, the Irish Government published the European Communities (Birds and Natural Habitats) Regulations 2011 which include the protection of the Irish bat fauna and further outline derogation licensing requirements re: European Protected Species.

References

Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) 1982
Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) 1979
EC Directive on The Conservation of Natural habitats and of Wild Fauna and Flora (Habitats Directive) 1992
European Communities (Birds and Natural Habitats) Regulations 2011 Government of Ireland, Dublin
Kelleher, C. and Marnell, F. 2007 *Bat Mitigation Guidelines for Ireland – Irish Wildlife Manuals No. 25*. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin
Marnell, F., Kingston, N. and Looney, D. 2009 *Ireland Red List No. 3: Terrestrial Mammals.* National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin
Wildlife Act 1976 and Wildlife Amendment Acts 2000 and 2010. Government of Ireland
Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016)
https://cdn.bats.org.uk/pdf/Resources/Bat_Survey_Guidelines_2016_NON_PRINTABLE.pdf?mtime=20181115113931&focal=none
Bat Mitigation Guidelines for Ireland (NPWS, 2006)
https://www.npws.ie/sites/default/files/publications/pdf/IWM25.pdf
Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes (NRA, 2006).
https://www.tii.ie/technical-services/environment/planning/Best_Practice_Guidelines_for_the_Conservation_of_Bats_in_the_Planning_of_National_Road_Schemes.pdf

Appendix 8.3.1Derogation Licence Application Form

An Roinn
Ealaíon, Oidhreachta agus Gaeltachta
Department of
Arts, Heritage and the Gaeltacht

European Communities (Birds and Natural Habitats) Regulations 2011

Application for a Licence to allow for the removal of a tree with potential for bat-use

- This form should be completed by the home owner or occupier.
- Please complete this application form using **dark ink** and BLOCK CAPITALS.
- Please ensure that you answer questions fully in order to avoid delays.
- NPWS will aim to determine whether a licence should be issued within 15 working days of receipt of a completed application.
- If you experience any problems filling in this form, please contact the Species Licensing Unit (details opposite).

Wildlife Licensing Unit,

National Parks & Wildlife Service,

7 Ely Place
Dublin 2
Phone: 01 8883242

Email: wildlifelicence@ahg.gov.ie

Advice on bat presence at this site has been given by Bryan Deegan MCIEEM, following an onsite survey (insert the name of NPWS officer)

Having carefully considered this and discussed alternative solutions, I wish to apply for a licence under Section 54 of the European Communities (Birds and Natural Habitats) Regulations 2011.

Part A. The Applicant: Personal details

These questions relate to the owner or occupier, or a person acting on their behalf, who will be the **named licensee**. As the licensee you will be responsible for ensuring compliance with the licence and its conditions, even though you may employ another person to act on your behalf.

1. (a) Name of applicant

Title (Mr/Mrs/Miss/Ms)	Forename(s)	Surname
MR.	**Bryan**	**Deegan**

(b) Address	**Altemar Limited**
	50 Templecarrig Upper
Town	**Greystones**
County	**Wicklow**
Tel number	
Mobile number	**086-8366641**

Email address	**bryan@altemar.ie**

(c) Address where works are to be carried out if different from (b) above	**Central Mental Hospital**
	Dundrum Road,
Town	**Dundrum**
County	**Dublin 14**

Part B. The Application:

2. Species of Bat. Please indicate which species is affected by the proposed works.

Leislers bat (*Nyctalus leisleri*)	**X**
Other (Please specify)	

3. Satisfactory alternatives:

The continued use by bats (if present) of the existing structures is unviable for the reason given below and there is no satisfactory alternative solution other than to safely exclude the bats, thus destroying any potential roost. Mitigation is proposed through the provision of bat boxes in the new housing development.

4. Activity to be licensed:

Removal of derelict house	**X**	Removal of tree where a Leisler's bat was observed emerging i.e. potential bat roost for a single Leisler's bat.

5. Purpose of licence

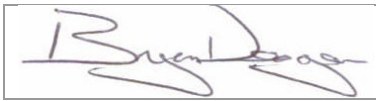
Public health	The bats are causing intolerable smell or noise within the property which is affecting the residents' health or the health of their family. The resident of the property finds the presence of the bats disturbing to the extent that it is threatening their health or the health of their family.	
Serious damage	Continued bat access is causing damage to the property and this is likely to continue for as long as the roost is present.	
Conservation	**It is proposed to fell the tree as part of a housing development. Mitigation is proposed.**	**X**

Part C. Declarations.

6. I understand that this licence application will be considered by the Species Licensing Unit in conjunction with the report submitted by the local NPWS representative **and the accompanying bat survey report.**

I understand that the deliberate killing, injuring, capturing or disturbing of bats, or damage or destruction of their roosts is illegal without a licence and that it is a legal requirement to comply with the conditions of any licence I may be granted following this application. I understand that NPWS may visit to check compliance with a licence.

I authorise employees of NPWS to enter the site which is the subject of this application for the purpose of monitoring and inspecting the permitted works where a prior appointment has been agreed.

Signature of the **Applicant**		Date	1st March 2022
Name in BLOCK LETTERS	**Bryan Deegan (MCIEEM)**		

S.I. Ltd Contract No: 5811

Client:	Land Development Agency
Engineer:	Barrett Mahony
Contractor:	Site Investigations Ltd

Dundrum Central Development
Dundrum, Dublin 14
Site Investigation Report

Prepared by:

Letch

.....

Stephen Letch

Issue Date:	09/11/2021
Status	Final
Revision	1

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Appendices:

1. Cable Percussive Borehole Logs
2. Trial Pit Logs and Photographs
3. Soakaway Test Results and Photographs
4. Foundation Pit Logs
5. Slit Trench Logs
6. Geotechnical Laboratory Test Results
7. Environmental Laboratory Test Results
8. Waste Classification Report
9. Survey Data

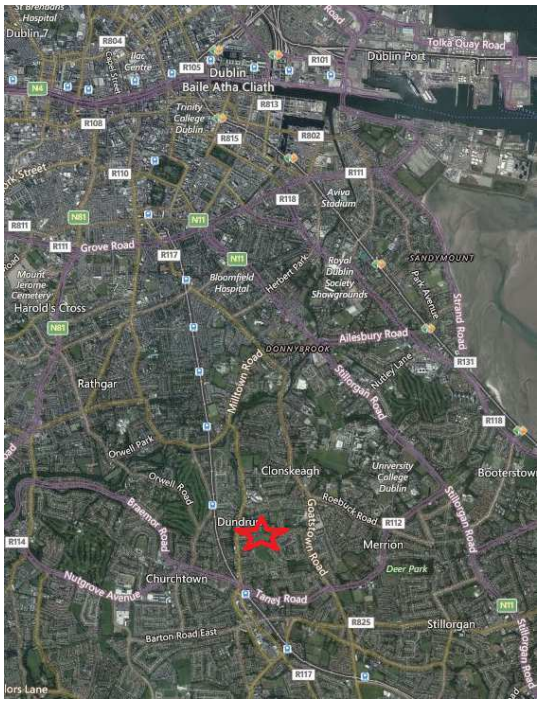
1. Introduction

On the instructions of Barrett Mahony, Site Investigations Ltd (SIL) was appointed to complete a ground investigation at the former Central Mental Hospital site in Dundrum, Dublin 14. The investigation was for a residential development on the site and was completed on behalf of the Client, Land Development Agency. Due to supervision issues, the fieldworks were initially started in March 2021 and then postponed until August and completed in September 2021.

This report presents the factual geotechnical data obtained from the field and laboratory testing with interpretation of the ground conditions discussed.

2. Site Location

The site is located in to the north of Dundrum town centre, which is to the south of Dublin city centre. The first map below shows the location of the site to the south of the city centre and the second map shows the location of the site to the north of Dundrum town centre.





3. Fieldwork

The fieldworks comprised a programme of cable percussive boreholes, trial pits, soakaway tests, foundation pits, slit trenches and California Bearing Ratio tests. All fieldwork was carried out in accordance with BS 5930:2015, Engineers Ireland GI Specification and Related Document 2nd Edition 2016 and Eurocode 7: Geotechnical Design.

The fieldworks comprised of the following:

- 16 No. cable percussive boreholes
- 35 No. trial pits
- 4 No. soakaway tests
- 7 No. foundation inspection pits
- 3 No. slit trenches
- 6 No. California Bearing Ratio tests

3.1. Cable Percussive Boreholes

Cable percussion boring was undertaken at 16 No. locations using a Dando 150 rig and constructed 200mm diameter boreholes. Hand dug inspection pits were excavated to check for underground services at each borehole location. The boreholes terminated at depths ranging from 4.50mbgl (BH12) to 8.60mbgl (BH11). It was not possible to collect undisturbed samples due to the granular soils encountered so bulk disturbed samples were recovered at regular intervals.

To test the strength of the stratum, Standard Penetration Tests (SPT's) were performed at 1.00m intervals in accordance with BS 1377 (1990). In soils with high gravel and cobble content it is appropriate to use a solid cone (60°) (CPT) instead of the split spoon and this was used throughout the testing. The test is completed over 450mm and the cone is driven 150mm into the stratum to ensure that the test is conducted over an undisturbed zone. The cone is then driven the remaining 300mm and the blows recorded to report the N-Value. The report shows the N-Value with the 75mm incremental blows listed in brackets (e.g., BH01 at 1.00mbgl where N=12-(2,2/2,4,3,3)). Where refusal of 50 blows across the test zone was encountered was achieved during testing, the penetration depth is also reported (e.g., BH01 at 7.60mbgl where N=50-(25 for 5mm/50 for 5mm)).

At 5 No. locations, standpipes to allow for long term groundwater monitoring were installed. These were slotted pipes with a gravel response zone to allow for the groundwater to equalise within the standpipe.

The logs are presented in Appendix 1.

3.2. Trial Pits

35 No. trial pits were excavated using a wheeled excavator with TP21 cancelled due to access issues. The pits were logged and photographed by SIL geotechnical engineer and representative disturbed bulk samples were recovered as the pits were excavated, which were returned to the laboratory for geotechnical testing.

The trial pit logs and photographs are presented in Appendix 2.

3.3. Soakaway Tests

At 4 No. locations, soakaway tests were completed and logged by SIL geotechnical engineer. BRE Special Digest 365 stipulates that the pit should be filled three times and that the final cycle is used to provide the infiltration rate. The time taken for the water level to fall from 75% volume to 25% volume is required to calculate the rate of infiltration. However, if the water level does not fall at a steady rate, then the test is deemed to have failed and the area is unsuitable for storm water drainage.

The soakaway test results and photographs are presented in Appendix 3.

3.4. Foundation Pits

At seven locations, foundation pits were excavated to investigate the depths of the foundations of the existing structure. FI02 was cancelled due to issues accessing the proposed location. The pits included hand excavating around the foundation to measure the depth to the top, extension out from the wall and the thickness of the foundation. The pits were then photographed, backfilled with arisings and reinstated.

The foundation pit logs are presented in Appendix 4.

3.5. Slit Trenches

Slit trenching was completed at 3 No. locations by hand digging with machine assistance where possible. The trenches were completed to check for any underground services at the selected locations. The trenches were logged and photographed before they were backfilled with the arisings.

The slit trench logs with photographs are presented in Appendix 5.

3.6. California Bearing Ratio Tests

At 6 No. locations, undisturbed cylindrical mould samples were recovered to complete California Bearing Ratio tests in the laboratory. The results facilitate the designing of the access roads and associated areas and are completed to BS1377: 1990: Part 4, Clause 7 ‘Determination of California Bearing Ratio’. The results are presented as part of Appendix 6 with the geotechnical laboratory test data.

3.7. Surveying

Following completion of all the fieldworks, a survey of the exploratory hole locations was completed using a GeoMax GPS Rover. The data is supplied on each individual log and along with a site plan in Appendix 9.

4. Laboratory Testing

Geotechnical laboratory testing was completed on representative soil samples in accordance with BS 1377 (1990). Testing included:

- 65 No. Moisture contents
- 12 No. Atterberg limits
- 25 No. Particle size gradings with 12 No. hydrometers
- 3 No. shear boxes
- 10 No. pH and sulphate content

Environmental testing was completed by Eurofins Chemtest Ltd and this allows for a Waste Classification report to be produced. The environmental testing consists of the following:

- 70 No. Suite I analysis

The geotechnical laboratory test results are presented in Appendix 6 with the environmental test results and Waste Classification report in Appendix 7 and 8 respectively.

5. Ground Conditions

5.1. MADE GROUND

MADE GROUND was encountered at most locations across the site generally to 1.10mbgl or shallower although it did extend deeper at 6 No. locations with TP02 recording fill material to 2.20mbgl. The fill material is dominated by consists of granular sand and gravel fill although some cohesive clay soils were also recorded. The foreign material recorded in these soils include concrete, timber, tarmacadam, pottery, bone, ash, slag, plastic bags and red brick fragments.

5.2. Overburden

The natural ground conditions are consistent with cohesive soils encountered across the site. This includes brown and brown grey overlying black slightly sandy gravelly silty CLAY with high cobble and low boulder content soils. The black CLAY was recorded at depths ranging from 1.80mbgl to 3.20mbgl. At the trial pit locations, some layers of granular GRAVEL were also recorded towards the north of the site. The boreholes terminated at depths ranging from 4.50mbgl to 8.60mbgl on boulder obstructions.

The SPT N-values in the natural ground at 1.00mbgl range from 4 to 19 indicating soft to stiff soils. The N-values then increase to 11 to 33 at 2.00mbgl and steadily increase with depth as the boreholes progress.

Laboratory tests of the shallow cohesive soils confirm that CLAY soils dominate the site with low to intermediate plasticity indexes of 14% to 16% recorded. The particle size distribution curves were poorly sorted straight-line curves with 22% to 53% fines content.

5.3. Groundwater

Groundwater details in the boreholes and trial pits during the fieldworks are noted on the logs in Appendix 1 and 2. Groundwater ingresses were recorded in 13 No. boreholes with initial water strikes between 0.80mbgl and 3.20mbgl. At four of the boreholes, BH11, BH13, BH15 and BH16, the initial strike was sealed off by the borehole casings and then groundwater re-entered the borehole between 3.50mbgl and 4.50mbgl.

Groundwater was recorded in 12 of the trial pits at depths ranging from 1.30mbgl to 2.10mbgl with ingress rates recorded as seepages to slow.

6. Recommendations and Conclusions

Please note the following caveats:

The recommendations given, and opinions expressed in this report are based on the findings as detailed in the exploratory hole records. Where an opinion is expressed on the material between the exploratory hole locations or below the final level of excavation, this is for guidance only and no liability can be accepted for its accuracy. No responsibility can be accepted for adjacent unexpected conditions that have not been revealed by the exploratory holes. It is further recommended that all bearing surfaces when excavated should be inspected by a suitably qualified Engineer to verify the information given in this report.

Excavated surfaces in clay strata should be kept dry to avoid softening prior to foundation placement. Foundations should always be taken to a minimum depth of 0.50mBGL to avoid the effects of frost action and possible seasonal shrinkage/swelling.

If it is intended that on-site materials are to be used as fill, then the necessary laboratory testing should be specified by the Client to confirm the suitability. Also, relevant lab testing should be specified where stability of side slopes to excavations is a concern, or where contamination may be an issue.

6.1. Shallow Foundations

Due to the unknown depth of foundation and no longer-term groundwater information, this analysis assumes the groundwater will not influence the construction or performance of these foundations.

As stated previously, man-made soils were recorded across the site to a maximum depth of 2.20mbgl. SIL do not recommend that narrow shallow foundations are placed on fill material due to the unknown compaction methods used during laying of man-made material. This unknown could result in softer spots and differential settlement once construction is completed. If shallow foundations are to be used and man-made soils are encountered below foundation level, then the soil should be removed and replaced with engineered fill which is compacted to the required standard.

Beneath the fill material the boreholes recorded cohesive CLAY soils. Using a correlation proposed by Stroud and Butler, the SPT N-values and plasticity indices can be used to calculate the undrained shear strength. With the low to intermediate plasticity indexes recorded in the laboratory for the soils encountered on site, this correlation is C_u=6N. This value can then be used to calculate the ultimate bearing capacity (UBC), and finally, a factor of safety is applied to get the allowable bearing capacity, with a factor of 3 chosen for this project.

BH:	1.20m				2.00m				3.00m			
	SPT	C_u	UBC	ABC	SPT	C_u	UBC	ABC	SPT	C_u	UBC	ABC
01	-	-	-	**-**	33	198	1045	**350**	32	192	1033	**345**
02	7	42	235	**80**	13	78	434	**145**	21	126	695	**230**
03	-	-	-	**-**	18	108	587	**195**	29	174	942	**315**
04	-	-	-	**-**	20	120	648	**215**	30	180	972	**325**
05	15	90	480	**160**	14	84	465	**155**	20	120	666	**220**
06	7	42	235	**80**	17	102	556	**185**	21	126	695	**230**
07	-	-	-	**-**	22	132	710	**235**	24	144	788	**265**
08	11	66	358	**120**	14	84	465	**155**	31	156	1000	**335**
09	19	114	603	**200**	19	114	617	**205**	31	156	1000	**335**
10	14	84	450	**150**	31	156	985	**330**	31	156	1000	**335**
11	10	60	328	**110**	19	114	617	**205**	35	210	1125	**375**
12	4	24	144	**50**	17	102	556	**185**	22	132	727	**245**
13	11	66	358	**120**	11	66	372	**125**	26	156	850	**285**
14	11	66	358	**120**	25	150	800	**265**	30	180	972	**325**
15	9	54	297	**100**	15	90	495	**165**	32	192	1033	**345**
16	14	84	450	**150**	33	198	1045	**350**	39	234	1247	**415**

All values are in kN/m^2.

The following assumptions were made as part of these analyses. If any of these assumptions are not in accordance with detailed design or observations made during construction these recommendations should be re-evaluated.

- Foundations are to be constructed on a level formation of uniform material type (described above).
- The bulk unit weight of the material in this stratum has a minimum density of 19kN/m^3.
- All bearing capacity calculations allow for a settlement of 25mm.

The trial pit walls remained stable during excavation. However, it would still be recommended that all excavations should be checked immediately and regular inspection of temporary excavations should be completed during construction to ensure that all slopes are stable. Temporary support should be used on any excavation that will be left open for an extended period.

6.2. Groundwater

The caveats below relating to interpretation of groundwater levels should be noted:
There is always considerable uncertainty as to the likely rates of water ingress into excavations in clayey soil sites due to the possibility of localised unforeseen sand and gravel lenses acting as permeable conduits for unknown volumes of water.

Furthermore, water levels noted on the borehole and trial pit logs do not generally give an accurate indication of the actual groundwater conditions as the borehole or trial pit is rarely left open for sufficient time for the water level to reach equilibrium.

Also, during boring procedures, a permeable stratum may have been sealed off by the borehole casing, or water may have been added to aid drilling. Therefore, an extended period of groundwater monitoring using any constructed standpipes is required to provide more accurate information regarding groundwater conditions. Finally, groundwater levels vary with time of year, rainfall, nearby construction and tides.

Pumping tests would be required to determine likely seepage rates and persistence into excavations taken below the groundwater level. Deep trial pits also aid estimation of seepage rates.

As discussed previously, groundwater was recorded in 13 No. boreholes and 12 No. trial pits during the fieldworks. There is always considerable uncertainty as to the likely rates of water ingress into excavations in cohesive soil sites due to the possibility of localised unforeseen sand and gravel lenses acting as permeable conduits for unknown volumes of water. Based on this information at the exploratory hole locations to date, it is considered likely that any shallow ingress (less than 2.00mbgl) into excavations of the CLAY will be slow to medium. If granular soils are encountered in shallow excavations, then the possibility of water ingressing into an excavation increases.

If groundwater is encountered during excavations then mechanical pumps will be required to remove the groundwater from sumps. Sumps should be carefully located and constructed to ensure that groundwater is efficiently removed from excavations and trenches.

6.3. Soakaway Test

SA02 and SA03 passed the BRE specification with the water draining from the trial pit. SA02 was completed in fill material, which may not have been compacted as much as the natural soils and SA03 was completed in granular SAND and GRAVEL soils. The f-values were calculated as **7.36 x 10^{-5}m/s** and **2.20 x 10^{-4}m/s.** It would be recommended that any soakaway is placed in the natural granular soils.

The soakaway tests, SA01 and SA04, failed the specification as the water level did not fall sufficiently enough to complete the test. The BRE Digest stipulates that the pit should half empty within 24hrs, and extrapolation indicates this condition would not be satisfied. The tests were terminated at the end of the first (of a possible three) fill/empty cycle since further testing would give even slower fall rates due to increased soil saturation.

6.4. Pavement Design

The CBR test results in Appendix 6 indicate CBR values ranging from 6.4% to 8.9%.

The CBR samples were recovered at 0.40mbgl and inspection of the formation strata should be completed prior to construction of the pavement. Once the exact formation levels are finalised then additional in-situ testing could be completed to assist with the detailed pavement design.

6.5. Contamination

Environmental testing was carried out on seventy samples from the investigation and the results are shown in Appendix 7. For material to be removed from site, Suite I testing was carried out to determine if the material is hazardous or non-hazardous and then the leachate results were compared with the published waste acceptance limits of BS EN 12457-2 to determine whether the material on the site could be accepted as 'inert material' by an Irish landfill.

The Waste Classification report in Appendix 8, created using HazWasteOnline™ software, shows that the material tested can be classified as non-hazardous material.

Following this analysis of the solid test results, the leachate disposal suite results showed 36 No. samples remained within the Inert waste thresholds. 23 No. samples recorded determinands that exceed the Inert threshold but remain below the non-hazardous waste landfill levels whereas 11 samples exceeded these upper levels. It would be recommended that an Environmental Engineer is consulted prior to any earthworks commencing on site.

Seventy samples were tested for analysis but it cannot be discounted that any localised contamination may have been missed. Any MADE GROUND excavated on site should be stockpiled separately to natural soils to avoid any potential cross contamination of the soils. Additional testing of these soils may be requested by the individual landfill before acceptance and a testing regime designed by an environmental engineer would be recommended to satisfy the landfill.

6.6. Aggressive Ground Conditions

The chemical test results in Appendix 6 indicate a general pH value between 7.32 and 8.11, which is close to neutral and below the level of 9, therefore no special precautions are required.

The maximum value obtained for water soluble sulphate was 127mg/l as SO_3. The BRE Special Digest 1:2005 – '*Concrete in Aggressive Ground'* guidelines require SO_4 values and after conversion ($SO_4 = SO_3 \times 1.2$), the maximum value of 152mg/l shows Class 1 conditions and no special precautions are required.

Appendix 1

Cable Percussive Borehole Logs

Contract No: 5811	**Cable Percussion Borehole Log**	Borehole No: **BH01**

Contract:	Dundrum Central Development	Easting:	716933.200	Date Started:	22/03/2021
Location:	Dundrum, Dublin 14	Northing:	729245.309	Date Completed:	22/03/2021
Client:	Land Development Agency	Elevation:	41.09	Drilled By:	G. Macken
Engineer:	Barrett Mahony	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth (m) Depth	Stratum Description	Legend	Level (mOD) Scale	Level (mOD) Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
0	0.20	TOPSOIL.		41.0	40.89					
0.5		MADE GROUND: brown sandy slightly gravelly silty clay with medium cobble content.		40.5						
1.0						1.00	B	CMH001		
	1.30			40.0		1.20	C	N=12 (2,2/2,4,3,3)		
1.5		MADE GROUND: light brown sandy slightly gravelly silty clay.			39.79					
2.0	2.00			39.5						
		Stiff brown sandy slightly gravelly silty CLAY with low cobble content.		39.0	39.09	2.00	B	CMH002		
2.5						2.00	C	N=33 (6,8/7,8,8,10)		
3.0	2.90			38.5						
		Stiff black sandy slightly gravelly silty CLAY with low cobble content.		38.0	38.19	3.00	B	CMH003		
3.5						3.00	C	N=32 (5,7/8,8,7,9)		
4.0				37.5						
				37.0		4.00	B	CMH004		
4.5						4.00	C	N=19 (6,5/4,4,6,5)		
5.0				36.5						
				36.0		5.00	B	CMH005		
5.5						5.00	C	N=42 (8,8/11,10,11,10)		
6.0				35.5						
				35.0		6.00	B	CMH006		
6.5						6.00	C	N=26 (6,4/4,7,7,8)		
7.0				34.5						
				34.0		7.00	B	CMH007		
7.5	7.50					7.00	C	N=25 (5,5/7,6,6,6)		
	7.60	Obstruction - possible boulders.		33.5	33.59					
8.0		End of Borehole at 7.60m			33.49	7.60	C	50 (25 for 5mm/50 for 5mm)		
8.5				33.0						
				32.5						
9.0				32.0						
9.5				31.5						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
7.50	7.60	01:00				22/03	7.60	Dry				0.00	7.60	Arisings	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 5811	**Cable Percussion Borehole Log**	Borehole No: **BH02**

Contract:	Dundrum Central Development	Easting:	716986.720	Date Started:	03/09/2021
Location:	Dundrum, Dublin 14	Northing:	729198.826	Date Completed:	03/09/2021
Client:	Land Development Agency	Elevation:	43.22	Drilled By:	D. MacEoin
Engineer:	Barrett Mahony	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth (m) Depth	Stratum Description	Legend	Level (mOD) Scale	Level (mOD) Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
0.5	0.50	TOPSOIL.		43.0	42.72					
1.0		Soft becoming firm brown sandy slightly gravelly silty CLAY with low cobble content.		42.5		1.00	B	CMH042		
1.5				42.0		1.20	C	N=7 (1,1/2,1,2,2)		
2.0				41.5		2.00	B	CMH043		
2.5				41.0		2.00	C	N=13 (2,2/3,4,3,3)		
3.0	2.80	Stiff becoming very stiff black sandy slightly gravelly silty CLAY with low cobble content.		40.5	40.42	3.00	B	CMH044		
3.5				40.0		3.00	C	N=21 (3,3/4,5,6,6)		
4.0				39.5		4.00	B	CMH045		
4.5				39.0		4.00	C	N=26 (4,5/6,6,6,8)		
5.0				38.5		5.00	B	CMH046		
5.5				38.0		5.00	C	N=33 (4,4/7,8,9,9)		
6.0				37.5		6.00	B	CMH047		
6.5				37.0		6.00	C	N=38 (5,7/9,9,10,10)		
7.0				36.5		7.00	B	CMH048		
7.5				36.0		7.00	C	N=43 (5,6/9,10,11,13)		
8.0	7.70 7.80	Obstruction - possible boulders. End of Borehole at 7.80m		35.5 35.0	35.52 35.42	7.80	C	50 (25 for 5mm/50 for 0mm)		
8.5				34.5						
9.0				34.0						
9.5				33.5						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
1.80	2.00	01:00	2.00	1.70	2.5	03/09	7.80	Dry				0.00	7.80	Arisings	Borehole terminated due to obstruction.
7.70	7.80	01:00													

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 5811	**Cable Percussion Borehole Log**			Borehole No: **BH03**
Contract:	Dundrum Central Development	Easting:	717144.080	Date Started: 15/09/2021
Location:	Dundrum, Dublin 14	Northing:	729269.977	Date Completed: 15/09/2021
Client:	Land Development Agency	Elevation:	44.80	Drilled By: D. MacEoin
Engineer:	Barrett Mahony	Borehole Diameter:	200mm	Status: FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
	0.10	MADE GROUND: tarmacadam.			44.70					
	0.30	MADE GROUND: grey silty sandy gravel.		44.5	44.50					
0.5		MADE GROUND: brown sandy gravelly silty clay.								
1.0				44.0		1.00	B	CMH093		
						1.20	C	N=19 (2,3/5,4,4,6)		
	1.40			43.5	43.40					
1.5		Stiff brown grey sandy slightly gravelly silty CLAY with low cobble content.								
2.0				43.0		2.00	B	CMH094		
						2.00	C	N=18 (2,4/5,4,4,5)		
2.5				42.5						
3.0				42.0		3.00	B	CMH095		
	3.20				41.60	3.00	C	N=29 (5,5/7,8,7,7)		
3.5		Very stiff black sandy slightly gravelly silty CLAY with low cobble content.		41.5						
4.0				41.0		4.00	B	CMH096		
						4.00	C	N=31 (5,6/7,7,9,8)		
4.5				40.5						
5.0				40.0		5.00	B	CMH097		
						5.00	C	N=41 (7,9/10,11,10,10)		
5.5				39.5						
6.0				39.0		6.00	B	CMH098		
						6.00	C	N=43 (7,8/9,10,11,13)		
6.5				38.5						
7.0				38.0		7.00	B	CMH099		
						7.00	C	N=50 (9,9/50 for 275mm)		
				37.5						
7.5	7.50	Obstruction - possible boulders.			37.30					
	7.70	End of Borehole at 7.70m			37.10	7.70	C	50 (25 for 5mm/50 for 0mm)		
8.0				37.0						
8.5				36.5						
9.0				36.0						
9.5				35.5						
				35.0						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
7.50	7.70	01:00				15/09	7.70	Dry				0.00	7.70	Arisings	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 5811	**Cable Percussion Borehole Log**	Borehole No: **BH04**

Contract:	Dundrum Central Development	Easting:	717285.890	Date Started:	09/09/2021
Location:	Dundrum, Dublin 14	Northing:	729232.584	Date Completed:	09/09/2021
Client:	Land Development Agency	Elevation:	43.11	Drilled By:	D. MacEoin
Engineer:	Barrett Mahony	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
0	0.30	TOPSOIL.		43.0	42.81					
0.5		MADE GROUND: brown silty sandy gravel.		42.5						
1.0				42.0		1.00 1.20	B C	CMH071 N=10 (1,2/2,3,2,3)		
1.5	1.80			41.5	41.31					
2.0		Stiff brown grey sandy slightly gravelly silty CLAY with low cobble content.		41.0		2.00 2.00	B C	CMH072 N=20 (3,4/4,7,5,4)		
2.5	2.50	Stiff grey sandy slightly gravelly silty CLAY with low cobble content.		40.5	40.61					
3.0				40.0		3.00 3.00	B C	CMH073 N=30 (4,5/5,7,9,9)		
3.5	3.20	Very stiff black sandy slightly gravelly silty CLAY with low cobble content.		39.5	39.91					
4.0				39.0		4.00 4.00	B C	CMH074 N=36 (4,4/7,8,10,11)		
4.5				38.5						
5.0				38.0		5.00 5.00	B C	CMH075 N=40 (7,8/40 for 275mm)		
5.5	5.60	Obstruction - possible boulders.		37.5	37.51					
6.0	5.70	End of Borehole at 5.70m		37.0	37.41	5.70	C	50 (25 for 5mm/50 for 0mm)		
6.5				36.5						
7.0				36.0						
7.5				35.5						
8.0				35.0						
8.5				34.5						
9.0				34.0						
9.5				33.5						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
5.60	5.70	01:00				09/09	5.70	Dry				0.00	5.70	Arisings	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 5811	**Cable Percussion Borehole Log**	Borehole No: **BH05**

Contract:	Dundrum Central Development	Easting:	717343.690	Date Started:	23/03/2021
Location:	Dundrum, Dublin 14	Northing:	729264.246	Date Completed:	23/03/2021
Client:	Land Development Agency	Elevation:	41.44	Drilled By:	G. Macken
Engineer:	Barrett Mahony	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
	0.20	TOPSOIL.			41.24					
0.5		MADE GROUND: brown sandy slightly gravelly silty clay with medium cobble content and some red brick fragments.		41.0						
	0.80				40.64					
1.0		Firm brown sandy slightly gravelly silty CLAY with low cobble content.		40.5		1.00	B	CMH008		
						1.20	C	N=15 (3,3/5,4,3,3)		
1.5				40.0						
2.0				39.5		2.00	B	CMH009		
						2.00	C	N=14 (4,4/3,3,3,5)		
2.5				39.0					▼	
	2.60				38.84					
3.0		Very soft black sandy slightly gravelly silty CLAY with low cobble content.		38.5		3.00	B	CMH010		
	3.20				38.24	3.00	C	N=20 (4,5/5,4,6,5)		
3.5		Stiff black sandy slightly gravelly silty CLAY with low cobble content.		38.0						
4.0				37.5		4.00	B	CMH011		
						4.00	C	N=22 (6,5/6,6,5,5)		
4.5				37.0						
	4.80				36.64					
5.0	4.90	Obstruction - possible boulders.		36.5	36.54	4.90	C	50 (25 for 5mm/50 for 5mm)		
		End of Borehole at 4.90m								
5.5				36.0						
6.0				35.5						
6.5				35.0						
7.0				34.5						
7.5				34.0						
8.0				33.5						
8.5				33.0						
9.0				32.5						
9.5				32.0						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
4.80	4.90	01:00	2.60	2.40	3.2	23/03	4.90	Dry				0.00	4.90	Arisings	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 5811	**Cable Percussion Borehole Log**	Borehole No: **BH06**

Contract:	Dundrum Central Development	Easting:	716933.110	Date Started:	01/09/2021
Location:	Dundrum, Dublin 14	Northing:	729145.958	Date Completed:	01/09/2021
Client:	Land Development Agency	Elevation:	43.98	Drilled By:	D. MacEoin
Engineer:	Barrett Mahony	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
		TOPSOIL.								
0.5	0.40	Soft grey grey sandy slightly gravelly silty CLAY with low cobble content.		43.5	43.58					
1.0				43.0		1.00	B	CMH035		
						1.20	C	N=7 (2,2/2,1,2,2)		
1.5				42.5						
2.0	1.70	Stiff brown sandy slightly gravelly silty CLAY with low cobble content.		42.0	42.28	2.00	B	CMH036		
						2.00	C	N=17 (2,3/3,5,4,5)		
2.5				41.5						
3.0	2.80	Stiff becoming very stiff black sandy slightly gravelly silty CLAY with low cobble content.		41.0	41.18	3.00	B	CMH037		
						3.00	C	N=21 (3,4/4,5,6,6)		
3.5				40.5						
4.0				40.0		4.00	B	CMH038		
						4.00	C	N=35 (4,4/8,9,9,9)		
4.5				39.5						
5.0				39.0		5.00	B	CMH039		
						5.00	C	N=37 (5,5/9,10,9,9)		
5.5				38.5						
6.0				38.0		6.00	B	CMH040		
						6.00	C	N=38 (4,5/8,10,10,10)		
6.5				37.5						
7.0				37.0		7.00	B	CMH041		
						7.00	C	N=42 (3,5/10,11,11,10)		
7.5				36.5						
	7.80	Obstruction - possible boulders.			36.18					
8.0	8.00	End of Borehole at 8.00m		36.0	35.98	8.00	C	50 (25 for 5mm/50 for 5mm)		
8.5				35.5						
9.0				35.0						
9.5				34.5						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
7.80	8.00	01:00	2.00	1.80	2.5	01/09	8.00	Dry	0.00	1.50	Solid	0.00	1.00	Bentonite	Borehole terminated due to obstruction.
									1.50	7.00	Slotted	1.00	8.00	Gravel	

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 5811	**Cable Percussion Borehole Log**	Borehole No: **BH07**

Contract:	Dundrum Central Development	Easting:	717074.690	Date Started:	24/03/2021
Location:	Dundrum, Dublin 14	Northing:	729141.537	Date Completed:	24/03/2021
Client:	Land Development Agency	Elevation:	45.20	Drilled By:	G. Macken
Engineer:	Barrett Mahony	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
0.5	0.20	TOPSOIL.		45.0	45.00					
		MADE GROUND: brown sandy slightly gravelly silty clay with medium cobble content and some red brick fragments.		44.5						
1.0						1.00	B	CMH016		
				44.0		1.20	C	N=9 (2,2/3,2,2,2)		
1.5	1.50				43.70					
		Stiff brown sandy slightly gravelly silty clay with medium cobble content.		43.5						
2.0						2.00	B	CMH017		
				43.0		2.00	C	N=22 (2,4/4,9,6,3)		
2.5				42.5						
3.0						3.00	B	CMH018		
	3.20			42.0	42.00	3.00	C	N=24 (3,5/7,5,5,7)		
3.5		Stiff black sandy slightly gravelly silty CLAY with low cobble content.								
	3.70			41.5	41.50					
4.0		Stiff black sandy slightly gravelly silty CLAY with low cobble content.				4.00	B	CMH019		
				41.0		4.00	C	N=22 (5,7/7,4,6,5)		
4.5				40.5						
5.0						5.00	B	CMH020		
	5.10				40.10	5.00	C	50 (25 for		
	5.20	Obstruction - possible boulders.		40.0	40.00	5.20	C	125mm/50 for		
5.5		End of Borehole at 5.20m						5mm)		
				39.5				50 (25 for		
6.0								10mm/50 for		
6.5				39.0				5mm)		
				38.5						
7.0										
				38.0						
7.5										
				37.5						
8.0										
				37.0						
8.5										
				36.5						
9.0										
				36.0						
9.5										
				35.5						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
5.10	5.20	01:00	3.20	2.90	3.7	24/03	5.20	Dry				0.00	5.20	Arisings	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 5811	**Cable Percussion Borehole Log**	Borehole No: **BH08**

Contract:	Dundrum Central Development	Easting:	717225.400	Date Started:	14/09/2021
Location:	Dundrum, Dublin 14	Northing:	729148.228	Date Completed:	14/09/2021
Client:	Land Development Agency	Elevation:	43.24	Drilled By:	D. MacEoin
Engineer:	Barrett Mahony	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
0	0.10	MADE GROUND: tarmacadam.		43.0	43.14					
	0.30	MADE GROUND: grey silty sandy gravel.			42.94					
0.5		Firm brown sandy slightly gravelly silty CLAY with low cobble content.		42.5						
1.0						1.00	B	CMH087		
				42.0		1.20	C	N=11 (2,2/3,2,3,3)		
1.5				41.5						
2.0						2.00	B	CMH088		
				41.0		2.00	C	N=14 (3,3/3,4,4,3)		
2.5	2.50	Very stiff black sandy slightly gravelly silty CLAY with low cobble content.			40.74					
3.0				40.5						
						3.00	B	CMH089		
3.5				40.0		3.00	C	N=31 (3,5/7,7,8,9)		
4.0				39.5						
						4.00	B	CMH090		
4.5				39.0		4.00	C	N=34 (5,4/8,8,9,9)		
5.0				38.5						
						5.00	B	CMH091		
5.5				38.0		5.00	C	N=36 (6,7/7,8,10,11)		
6.0				37.5						
						6.00	B	CMH092		
6.5				37.0		6.00	C	N=44 (7,9/10,11,12,11)		
	6.70			36.5	36.54					
	6.90	Obstruction - possible boulders.			36.34	6.90	C	50 (25 for 5mm/50 for 0mm)		
7.0		End of Borehole at 6.90m		36.0						
7.5				35.5						
8.0				35.0						
8.5				34.5						
9.0				34.0						
9.5				33.5						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
6.70	6.90	01:00	2.20	2.00	NS	14/09	6.90	3	0.00 1.50	1.50 4.70	Solid Slotted	0.00 1.00	1.00 6.90	Bentonite Gravel	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 5811	**Cable Percussion Borehole Log**	Borehole No: **BH09**

Contract:	Dundrum Central Development	Easting:	717318.050	Date Started:	10/09/2021
Location:	Dundrum, Dublin 14	Northing:	729168.875	Date Completed:	10/09/2021
Client:	Land Development Agency	Elevation:	42.05	Drilled By:	D. MacEoin
Engineer:	Barrett Mahony	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
0.5	0.20	TOPSOIL.		41.5	41.85					
		MADE GROUND: brown silty gravelly sand.								
1.0	0.90	Stiff brown grey sandy slightly gravelly silty CLAY with low cobble content.		41.0	41.15	1.00	B	CMH076		
						1.20	C	N=19 (2,3/5,4,5,5)		
1.5				40.5						
2.0				40.0		2.00	B	CMH077		
	2.20				39.85	2.00	C	N=19 (3,2/5,5,4,5)		
2.5		Stiff becoming very stiff black sandy slightly gravelly silty CLAY with low cobble content.		39.5						
3.0				39.0		3.00	B	CMH078	▼	
						3.00	C	N=31 (5,5/7,8,8,8)		
3.5				38.5						
4.0				38.0		4.00	B	CMH079		
						4.00	C	N=34 (4,5/8,9,8,9)		
4.5				37.5						
5.0				37.0		5.00	B	CMH080		
						5.00	C	N=33 (5,6/6,9,9,9)		
5.5				36.5						
	5.70				36.35					
6.0	5.90	Obstruction - possible boulders.		36.0	36.15	5.90	C	50 (25 for 5mm/50 for 0mm)		
		End of Borehole at 5.90m								
6.5				35.5						
7.0				35.0						
7.5				34.5						
8.0				34.0						
8.5				33.5						
9.0				33.0						
9.5				32.5						

Chiselling:

From:	To:	Time:
5.70	5.90	01:00

Water Strikes:

Strike:	Rose:	Depth Sealed
3.00		NS

Water Details:

Date:	Hole Depth:	Water Depth:
10/09	5.90	4.5

Installation:

From:	To:	Pipe:
0.00	1.50	Solid
1.50	5.50	Slotted

Backfill:

From:	To:	Type:
0.00	1.00	Bentonite
1.00	5.90	Gravel

Remarks:

Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 5811	**Cable Percussion Borehole Log**	Borehole No: **BH10**

Contract:	Dundrum Central Development	Easting:	717262.520	Date Started:	13/09/2021
Location:	Dundrum, Dublin 14	Northing:	729108.428	Date Completed:	13/09/2021
Client:	Land Development Agency	Elevation:	43.35	Drilled By:	D. MacEoin
Engineer:	Barrett Mahony	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
0	0.10	MADE GROUND: tarmacadam.			43.25					
	0.30	MADE GROUND: grey silty sandy gravel.		43.0	43.05					
0.5		Firm brown sandy slightly gravelly silty CLAY with low cobble content.		42.5						
1.0						1.00	B	CMH081		
1.5				42.0		1.20	C	N=14 (1,2/3,4,4,3)		
2.0	2.00			41.5	41.35	2.00	B	CMH082		
		Very stiff black sandy slightly gravelly silty CLAY with low cobble content.				2.00	C	N=31 (3,3/5,8,9,9)		
2.5				41.0						
3.0				40.5		3.00	B	CMH083		
						3.00	C	N=31		
3.5				40.0				(4,5/5,7,9,10)		
4.0				39.5		4.00	B	CMH084		
						4.00	C	N=37		
4.5				39.0				(5,5/8,9,9,11)		
5.0				38.5		5.00	B	CMH085		
						5.00	C	N=43		
5.5				38.0				(6,7/10,11,11,11)		
6.0				37.5		6.00	B	CMH086		
						6.00	C	N=41		
6.5				37.0				(7,6/9,9,12,11)		
	6.70				36.65					
	6.80	Obstruction - possible boulders.		36.5	36.55	6.80	C	50 (25 for 5mm/50 for 5mm)		
7.0		End of Borehole at 6.80m								
7.5				36.0						
8.0				35.5						
8.5				35.0						
9.0				34.5						
9.5				34.0						
				33.5						

Chiselling:

From:	To:	Time:
6.70	6.80	01:00

Water Strikes:

Strike:	Rose:	Depth Sealed
2.50	2.10	NS

Water Details:

Date:	Hole Depth:	Water Depth:
13/09	6.80	5.5

Installation:

From:	To:	Pipe:
0.00	1.50	Solid
1.50	6.10	Slotted

Backfill:

From:	To:	Type:
0.00	1.00	Bentonite
1.00	6.80	Gravel

Remarks:

Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 5811	**Cable Percussion Borehole Log**	Borehole No: **BH11**

Contract:	Dundrum Central Development	Easting:	717138.430	Date Started:	08/09/2021
Location:	Dundrum, Dublin 14	Northing:	729040.155	Date Completed:	08/09/2021
Client:	Land Development Agency	Elevation:	45.15	Drilled By:	D. MacEoin
Engineer:	Barrett Mahony	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
		TOPSOIL.		45.0						
	0.30	MADE GROUND: brown silty gravelly sand.			44.85					
0.5				44.5						
1.0	1.00	Firm brown sandy slightly gravelly silty CLAY with low cobble content.			44.15	1.00	B	CMH063		
				44.0		1.20	C	N=10 (2,2/3,2,2,3)		
1.5				43.5						
	1.80	Stiff brown grey sandy slightly gravelly silty CLAY with low cobble content.			43.35					
2.0						2.00	B	CMH064		
				43.0		2.00	C	N=19 (3,3/5,4,5,5)		
2.5	2.60	Very stiff black sandy slightly gravelly silty CLAY with low cobble content.		42.5	42.55					
3.0						3.00	B	CMH065		
				42.0		3.00	C	N=35 (4,4/7,9,9,10)		
3.5				41.5						
4.0						4.00	B	CMH066		
				41.0		4.00	C	N=44 (5,6/9,12,11,12)		
4.5				40.5						
5.0						5.00	B	CMH067		
				40.0		5.00	C	N=47 (7,8/10,10,13,14)		
5.5				39.5						
6.0						6.00	B	CMH068		
				39.0		6.00	C	N=47 (7,7/11,12,12,12)		
6.5				38.5						
7.0						7.00	B	CMH069		
				38.0		7.00	C	N=50 (8,9/12,12,13,13)		
7.5				37.5						
8.0						8.00	B	CMH070		
				37.0		8.00	C	N=50 (9,9/50 for 250mm)		
8.5	8.50	Obstruction - possible boulders.			36.65					
	8.60	End of Borehole at 8.60m		36.5	36.55	8.60	C	50 (25 for 5mm/50 for 0mm)		
9.0				36.0						
9.5				35.5						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
8.50	8.60	01:00	2.40	2.20	3	08/09	8.60	Dry	0.00	1.50	Solid	0.00	1.00	Bentonite	Borehole terminated due to obstruction.
			4.50	4.10	5				1.50	8.30	Slotted	1.00	8.60	Gravel	

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 5811	**Cable Percussion Borehole Log**	Borehole No: **BH12**

Contract:	Dundrum Central Development	Easting:	717237.100	Date Started:	24/03/2021
Location:	Dundrum, Dublin 14	Northing:	729035.114	Date Completed:	24/03/2021
Client:	Land Development Agency	Elevation:	44.05	Drilled By:	G. Macken
Engineer:	Barrett Mahony	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
	0.20	TOPSOIL.			43.85					
0.5		MADE GROUND: brown sandy slightly gravelly silty clay with medium cobble content.		43.5						
	0.80				43.25					
1.0		Soft brown sandy slightly gravelly silty CLAY with low cobble content.		43.0		1.00	B	CMH012		
						1.20	C	N=4 (1,0/1,1,0,2)		
1.5				42.5						
2.0				42.0		2.00	B	CMH013		
	2.20				41.85	2.00	C	N=17 (1,1/2,5,4,6)		
2.5		Stiff black sandy slightly gravelly silty CLAY with low cobble content.		41.5						
3.0				41.0		3.00	B	CMH014		
						3.00	C	N=22 (5,4/4,6,5,7)		
3.5				40.5						
4.0				40.0		4.00	B	CMH015		
						4.00	C	N=29 (4,6/8,8,6,7)		
4.5	4.40				39.65					
	4.50	Obstruction - possible boulders.		39.5	39.55	4.50	C	50 (25 for 10mm/50 for 5mm)		
		End of Borehole at 4.50m								
5.0				39.0						
5.5				38.5						
6.0				38.0						
6.5				37.5						
7.0				37.0						
7.5				36.5						
8.0				36.0						
8.5				35.5						
9.0				35.0						
9.5				34.5						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
4.40	4.50	01:00	0.80	0.70	1.2	24/03	4.50	Dry				0.00	4.50	Arisings	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 5811	**Cable Percussion Borehole Log**			Borehole No: **BH13**
Contract:	Dundrum Central Development	Easting:	717291.630	Date Started: 31/08/2021
Location:	Dundrum, Dublin 14	Northing:	729059.971	Date Completed: 31/08/2021
Client:	Land Development Agency	Elevation:	43.64	Drilled By: D. MacEoin
Engineer:	Barrett Mahony	Borehole Diameter:	200mm	Status: FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
0	0.30	TOPSOIL.		43.5	43.34					
0.5		Firm brown sandy slightly gravelly silty CLAY with low cobble content.		43.0		1.00	B	CMH028		
1.0				42.5		1.20	C	N=11 (2,2/3,2,3,3)		
1.5				42.0						
2.0	2.00			41.64		2.00	B	CMH029		
2.5	2.30	Firm brown grey sandy slightly gravelly silty CLAY with low cobble content.		41.5	41.34	2.00	C	N=11 (2,3/2,3,3,3)		
		Stiff becoming very stiff black sandy slightly gravelly silty CLAY with low cobble content.		41.0						
3.0						3.00	B	CMH030		
3.5				40.5		3.00	C	N=26 (3,4/5,7,7,7)		
4.0				40.0						
4.5				39.5		4.00	B	CMH031		
5.0				39.0		4.00	C	N=28 (3,5/6,7,7,8)		
5.5				38.5		5.00	B	CMH032		
6.0				38.0		5.00	C	N=32 (4,4/7,8,8,9)		
6.5				37.5		6.00	B	CMH033		
7.0				37.0		6.00	C	N=35 (4,5/8,8,10,9)		
7.5				36.5		7.00	B	CMH034		
	7.60	Obstruction - possible boulders.		36.0	36.04	7.00	C	N=34 (4,4/7,9,9,9)		
	7.70	End of Borehole at 7.70m			35.94	7.70	C	50 (25 for 5mm/50 for 0mm)		
8.0				35.5						
8.5				35.0						
9.0				34.5						
9.5				34.0						

Chiselling:

From:	To:	Time:
7.60	7.70	01:00

Water Strikes:

Strike:	Rose:	Depth Sealed
1.80	1.50	2
3.50	3.30	3.7

Water Details:

Date:	Hole Depth:	Water Depth:
31/08	7.70	Dry

Installation:

From:	To:	Pipe:

Backfill:

From:	To:	Type:
0.00	7.70	Arisings

Remarks: Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 5811	**Cable Percussion Borehole Log**			Borehole No: **BH14**
Contract:	Dundrum Central Development	Easting:	717342.430	Date Started: 27/08/2021
Location:	Dundrum, Dublin 14	Northing:	729045.867	Date Completed: 30/08/2021
Client:	Land Development Agency	Elevation:	43.50	Drilled By: D. MacEoin
Engineer:	Barrett Mahony	Borehole Diameter:	200mm	Status: FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
	0.20	TOPSOIL.			43.30					
0.5		Firm brown sandy slightly gravelly silty CLAY with low cobble content.		43.0						
1.0				42.5		1.00	B	CMH021		
1.5				42.0		1.20	C	N=11 (1,1/2,3,3,3)		
2.0	1.90			41.5	41.60	2.00	B	CMH022		
2.5		Stiff becoming very stiff black sandy slightly gravelly silty CLAY with low cobble content.		41.0		2.00	C	N=25 (2,3/5,6,7,7)		
3.0				40.5		3.00	B	CMH023		
3.5				40.0		3.00	C	N=30 (4,4/7,7,8,8)		
4.0				39.5		4.00	B	CMH024		
4.5				39.0		4.00	C	N=29 (4,5/7,7,7,8)		
5.0				38.5		5.00	B	CMH025		
5.5				38.0		5.00	C	N=28 (5,5/6,6,8,8)		
6.0				37.5		6.00	B	CMH026		
6.5				37.0		6.00	C	N=35 (5,7/8,8,9,10)		
7.0				36.5		7.00	B	CMH027		
						7.00	C	50 (6,6/50 for 200mm)		
7.5	7.40				36.10					
	7.50	Obstruction - possible boulders.		36.0	36.00	7.50	C	50 (25 for 5mm/50 for 5mm)		
		End of Borehole at 7.50m								
8.0				35.5						
8.5				35.0						
9.0				34.5						
9.5				34.0						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
			2.20 4.20	2.00 4.50	2.5 4.5	30/08	7.50	Dry				0.00	7.50	Arisings	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 5811	**Cable Percussion Borehole Log**	Borehole No: **BH15**

Contract:	Dundrum Central Development	Easting:	717190.830	Date Started:	06/09/2021
Location:	Dundrum, Dublin 14	Northing:	728984.102	Date Completed:	06/09/2021
Client:	Land Development Agency	Elevation:	44.51	Drilled By:	D. MacEoin
Engineer:	Barrett Mahony	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
0.5	0.30	TOPSOIL.		44.0	44.21					
1.0		Firm brown sandy slightly gravelly silty CLAY with low cobble content.		43.5		1.00 1.20	B C	CMH049 N=9 (1,1/2,2,2,3)		
1.5	1.50	Firm brown grey sandy slightly gravelly silty CLAY with low cobble content.		43.0	43.01					
2.0				42.5		2.00 2.00	B C	CMH050 N=15 (2,3/3,4,4,4)	▼	
2.5	2.20	Stiff becoming very stiff black sandy slightly gravelly silty CLAY with low cobble content.		42.0	42.31					
3.0				41.5		3.00 3.00	B C	CMH051 N=32 (3,5/7,8,8,9)		
3.5				41.0						
4.0				40.5		4.00 4.00	B C	CMH052 N=33 (4,4/7,7,9,10)		
4.5				40.0						
5.0				39.5		5.00 5.00	B C	CMH053 N=37 (5,6/8,9,10,10)		
5.5				39.0						
6.0				38.5		6.00 6.00	B C	CMH054 N=37 (4,6/9,9,9,10)		
6.5				38.0						
7.0				37.5		7.00 7.00	B C	CMH055 N=47 (6,7/10,12,13,12)		
7.5				37.0						
8.0	7.80 7.90	Obstruction - possible boulders. End of Borehole at 7.90m		36.5	36.71 36.61	7.90	C	50 (25 for 5mm/50 for 5mm)		
8.5				36.0						
9.0				35.5						
9.5				35.0						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
7.80	7.90	01:00	2.50	2.30	3	06/09	7.90	Dry				0.00	7.90	Arisings	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 5811	**Cable Percussion Borehole Log**			Borehole No: **BH16**
Contract:	Dundrum Central Development	Easting:	717118.130	Date Started: 07/09/2021
Location:	Dundrum, Dublin 14	Northing:	728960.452	Date Completed: 07/09/2021
Client:	Land Development Agency	Elevation:	45.00	Drilled By: D. MacEoin
Engineer:	Barrett Mahony	Borehole Diameter:	200mm	Status: FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
0.5	0.40	TOPSOIL.		44.5	44.60					
1.0		Firm brown sandy slightly gravelly silty CLAY with low cobble content.		44.0		1.00 1.20	B C	CMH056 N=14 (2,2/3,2,4,5)		
1.5				43.5						
2.0	1.80	Very stiff black sandy slightly gravelly silty CLAY with low cobble content.		43.0	43.20	2.00 2.00	B C	CMH057 N=33 (3,4/7,7,9,10)		
2.5				42.5						
3.0				42.0		3.00 3.00	B C	CMH058 N=39 (4,4/8,9,11,11)		
3.5				41.5						
4.0				41.0		4.00 4.00	B C	CMH059 N=45 (5,7/10,11,12,12)		
4.5				40.5						
5.0				40.0		5.00 5.00	B C	CMH060 N=43 (5,5/8,10,12,13)		
5.5				39.5						
6.0				39.0		6.00 6.00	B C	CMH061 N=44 (6,5/9,11,12,12)		
6.5				38.5						
7.0				38.0		7.00 7.00	B C	CMH062 N=47 (5,7/11,11,13,12)		
7.5				37.5						
8.0	7.80 7.90	Obstruction - possible boulders. End of Borehole at 7.90m		37.0	37.20 37.10	7.90	C	50 (25 for 5mm/50 for 0mm)		
8.5				36.5						
9.0				36.0						
9.5				35.5						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
7.80	7.90	01:00	2.00 4.50	1.80 4.10	2.2 5	07/09	7.90	Dry				0.00	7.90	Arisings	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Appendix 2

Trial Pit Logs and Photographs

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP01**
Contract:	Dundrum Central Development	Easting:	717085.526	Date:	30/08/2021
Location:	Dundrum, Dublin 14	Northing:	729239.061	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	44.25	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.30 x 0.70 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.							
	0.20	MADE GROUND: dark grey slightly silty gravelly sand with some bone, pottery, timber and red bricks fragments.			44.05				
0.5				44.0		0.30	ES	MK01	
				43.5					
	0.90	Light grey silty very sandy fine to coarse, angular to subrounded GRAVEL of various lithologies with high cobble content. Sand is fine to coarse. Cobbles are angular to subrounded of various lithologies.			43.35				
1.0						1.00	ES	MK02	
				43.0					
1.5						1.50	B	MK03	
				42.5					
2.0									
				42.0					
2.5	2.50	**Pit terminated at 2.50m**			41.75				
				41.5					
3.0									

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP02**
Contract:	Dundrum Central Development	Easting:	717251.172	Date:	31/08/2021
Location:	Dundrum, Dublin 14	Northing:	729280.658	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	43.99	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.20 x 0.70 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
	0.05	TOPSOIL.			43.94				
		MADE GROUND: dark grey gravelly sand with low cobble content and some coal fragments.				0.20	ES	MK04	
0.5				43.5					
1.0				43.0					
	1.10	MADE GROUND: light grey very gravelly sand with low cobble content and some coal, concrete, glass and red brick fragments			42.89				
						1.40	ES	MK05	
1.5				42.5					
2.0				42.0					
	2.20	Grey silty gravelly fine to coarse SAND with low cobble content. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			41.79				
2.5	2.50	**Pit terminated at 2.50m**		41.5	41.49				
3.0				41.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP03**
Contract:	Dundrum Central Development	Easting:	717329.636	Date:	23/08/2021
Location:	Dundrum, Dublin 14	Northing:	729286.170	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	41.57	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.90 x 0.70 x 2.10	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
	0.05	TOPSOIL.		41.5	41.52				
		MADE GROUND: black slightly silty gravelly sand with high cobble and low boulder content and some bone, concrete and red brick fragments.				0.30	ES	MK06	
0.5				41.0					
1.0	1.00				40.57				
		Soft becoming firm sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.		40.5		1.20	ES	MK07	
1.5						1.50	B	MK08	
				40.0					
	1.70				39.87				
		Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles and boulders are angular to subrounded of various lithologies (up to 400mm diameter).							
2.0				39.5					
	2.10	Obstruction - boulders.			39.47				
		Pit terminated at 2.10m							
2.5				39.0					
3.0				38.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP04**
Contract:	Dundrum Central Development	Easting:	716953.047	Date:	17/08/2021
Location:	Dundrum, Dublin 14	Northing:	729241.320	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	41.79	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.60 x 0.55 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
	0.10	TOPSOIL.			41.69				
		MADE GROUND: grey brown very sandy graves with high cobble content and some sea shells, glass and red bricks fragments.		41.5		0.40	ES	MK09	
0.5									
	0.70	Brown very silty sandy fine to coarse, angular to subrounded GRAVEL of various lithologies with high cobble content. Sand is fine to coarse. Cobbles are angular to subrounded of various lithologies.			41.09				
				41.0					
1.0						1.00	B	MK10	
				40.5					
1.5	1.50	Grey brown silty very sandy fine to coarse, angular to subrounded GRAVEL of various lithologies with high cobble and low boulder content. Sand is fine to coarse. Cobbles and boulders are angular to subrounded of various lithologies (up to 400mm diameter).			40.29	1.50	ES	MK11	
				40.0					
2.0						2.00	B	MK12	
				39.5					
2.5	2.50	**Pit terminated at 2.50m**			39.29				
				39.0					
3.0									

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP05**
Contract:	Dundrum Central Development	Easting:	716922.392	Date:	21/09/2021
Location:	Dundrum, Dublin 14	Northing:	729191.442	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	43.63	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.10 x 0.60 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
	0.10	TOPSOIL.		43.5	43.53				
		MADE GROUND: light brown silty gravelly sand with low cobble content and some pottery fragments.				0.30	ES	MK13	
	0.40	Light grey light brown slightly silty sandy fine to coarse, angular to subrounded GRAVEL of various lithologies with high cobble content. Sand is fine to coarse. Cobbles are angular to subrounded of various lithologies.			43.23	0.50	ES	MK14	
0.5				43.0					
1.0						1.00	B	MK15	
						1.00	ES	MK16	
				42.5					
1.5									
				42.0					
	1.80	Firm grey brown sandy slightly gravelly silty CLAY with high cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			41.83				
2.0				41.5					
2.5	2.50	**Pit terminated at 2.50m**			41.13				
				41.0					
3.0									
				40.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP06**
Contract:	Dundrum Central Development	Easting:	716961.576	Date:	21/09/2021
Location:	Dundrum, Dublin 14	Northing:	729197.572	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	42.92	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.40 x 0.60 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.							
	0.20	Grey brown silty very sandy fine to coarse, angular to subrounded GRAVEL of various lithologies with high cobble content and occasional clay bands. Sand is fine to coarse. Cobbles are angular to subrounded of various lithologies.			42.72	0.30	ES	MK17	
0.5				42.5					
1.0				42.0		1.00 1.00	B ES	MK18 MK19	
1.5				41.5					
2.0				41.0					▼
	2.10	Firm light grey sandy slightly gravelly silty CLAY with high cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			40.82				
2.5				40.5					
	2.50	**Pit terminated at 2.50m**			40.42				
3.0				40.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	2.10 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP07**
Contract:	Dundrum Central Development	Easting:	717300.745	Date:	23/08/2021
Location:	Dundrum, Dublin 14	Northing:	729245.984	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	42.50	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.40 x 0.70 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.							
	0.10	MADE GROUND: black silty gravelly sand with some bone and scrap metal fragments			42.40	0.30	ES	MK20	
	0.40	MADE GROUND: brown sandy slightly gravelly silty clay with medium cobble content and occasional mortar fragments.			42.10				
0.5				42.0					
1.0				41.5		1.00	ES	MK21	
	1.10	Firm grey brown sandy gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			41.40				
1.5				41.0		1.50	B	MK22	
2.0				40.5					
2.5	2.50	**Pit terminated at 2.50m**		40.0	40.00				
3.0				39.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP08**
Contract:	Dundrum Central Development	Easting:	717339.782	Date:	23/08/2021
Location:	Dundrum, Dublin 14	Northing:	729253.814	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	40.92	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.20 x 0.70 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.							
	0.10	MADE GROUND: black silty slightly gravelly sand with some red brick fragments.			40.82				
				40.5		0.30	ES	MK23	
0.5									
	0.60	Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble content and frequent gravel laminas. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			40.32				
				40.0					
1.0						1.00	ES	MK24	
				39.5					
1.5						1.50	B	MK25	
				39.0					
2.0									
	2.20	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			38.72				
				38.5					
2.5	2.50	**Pit terminated at 2.50m**			38.42				
				38.0					
3.0									

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP09**
Contract:	Dundrum Central Development	Easting:	716960.867	Date:	21/09/2021
Location:	Dundrum, Dublin 14	Northing:	729152.350	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	43.95	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.50 x 0.60 x 2.10	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.			43.75				
	0.20	Brown silty very sandy fine to coarse, angular to subrounded GRAVEL of various lithologies with high cobble and low boulder content. Sand is fine to coarse. Cobbles and boulders are angular to subrounded of various lithologies (up to 400mm diameter).				0.30	ES	MK26	
0.5				43.5					
1.0				43.0		1.00	B	MK27	
						1.00	ES	MK28	
1.5				42.5		1.50	ES	MK29	
	1.80	Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles and boulders are angular to subrounded of various lithologies (up to 400mm diameter).			42.15				
2.0				42.0					
	2.10	Obstruction - boulders.			41.85				
		Pit terminated at 2.10m							
2.5				41.5					
3.0				41.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP10**
Contract:	Dundrum Central Development	Easting:	717000.196	Date:	21/09/2021
Location:	Dundrum, Dublin 14	Northing:	729150.369	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	44.08	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.50 x 0.60 x 1.40	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.		44.0					
	0.20	MADE GROUND: grey brown silty very gravelly sand with some concrete blocks (1.20m long), red brick, timber, plastic bags and scrap metal fragments..			43.88	0.30	ES	MK30	
0.5				43.5					
1.0				43.0					
	1.40	Refusal on concrete blocks **Pit terminated at 1.40m**			42.68	1.40	ES	MK31	
1.5				42.5					
2.0				42.0					
2.5				41.5					
3.0				41.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP11**
Contract:	Dundrum Central Development	Easting:	717039.859	Date:	21/09/2021
Location:	Dundrum, Dublin 14	Northing:	729149.313	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	44.70	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.60 x 0.60 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.							
	0.10	MADE GROUND: dark grey slightly silty gravelly sand with some rags and red bricks fragments.			44.60				
				44.5		0.30	ES	MK32	
0.5									
	0.60	Firm brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			44.10				
				44.0					
1.0						1.00	ES	MK33	
	1.10	Firm light brown sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies.			43.60				
				43.5		1.20	B	MK34	
1.5									
	1.60	Firm dark brown slightly sandy gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			43.10				
				43.0					
	1.80	Grey brown slightly silty gravelly fine to coarse SAND with high cobble content. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			42.90				
2.0									
				42.5					
2.5	2.50	**Pit terminated at 2.50m**			42.20				
				42.0					
3.0									

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP12**
Contract:	Dundrum Central Development	Easting:	717073.856	Date:	21/09/2021
Location:	Dundrum, Dublin 14	Northing:	729116.202	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	45.63	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.90 x 0.60 x 1.80	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
	0.10	TOPSOIL.		45.5	45.53				
		MADE GROUND: grey brown very sandy gravel with high cobble content and some concrete and red brick fragments.				0.30	ES	MK35	
0.5	0.50	Grey brown silty sandy fine to coarse, angular to subrounded GRAVEL of various lithologies with high cobble and low boulder content. Sand is fine to coarse. Cobbles and boulders are angular to subrounded of various lithologies (up to 400mm diameter).		45.0	45.13				
1.0						1.00 1.00	B ES	MK36 MK37	
				44.5					
1.5				44.0					
	1.80	Obstruction - boulders.			43.83				
		Pit terminated at 1.80m							
2.0				43.5					
2.5				43.0					
3.0				42.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP13**
Contract:	Dundrum Central Development	Easting:	717131.226	Date:	31/08/2021
Location:	Dundrum, Dublin 14	Northing:	729149.861	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	44.70	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.90 x 0.70 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
	0.05	TOPSOIL.			44.65				
		MADE GROUND: grey slightly silty gravelly sand with low cobble content and some red bricks fragments.							
	0.20	Light brown slightly silty gravelly fine to coarse SAND with low cobble content. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.		44.5	44.50	0.30	ES	MK38	
0.5				44.0					
	0.90	Grey brown silty sandy fine to coarse, angular to subrounded GRAVEL of various lithologies with high cobble content. Sand is fine to coarse. Cobbles are angular to subrounded of various lithologies.			43.80	1.00	ES	MK39	
1.0				43.5					
1.5						1.50	B	MK40	
				43.0					
2.0									
				42.5					
2.5	2.50	**Pit terminated at 2.50m**			42.20				
				42.0					
3.0									

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP14**
Contract:	Dundrum Central Development	Easting:	717202.755	Date:	31/08/2021
Location:	Dundrum, Dublin 14	Northing:	729166.921	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	44.28	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.20 x 0.70 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.							
	0.10	MADE GROUND: grey brown slightly silty gravelly sand with some bone fragments.			44.18				
				44.0		0.30	ES	MK41	
0.5	0.50	Grey brown silty very sandy fine to coarse, angular to subrounded GRAVEL of various lithologies with high cobble content. Sand is fine to coarse. Cobbles are angular to subrounded of various lithologies.			43.78				
				43.5					
1.0						1.00	ES	MK42	
				43.0					
1.5						1.50	B	MK43	
				42.5					
2.0									
				42.0					
2.5	2.50	**Pit terminated at 2.50m**			41.78				
				41.5					
3.0									

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP15**
Contract:	Dundrum Central Development	Easting:	717288.936	Date:	30/08/2021
Location:	Dundrum, Dublin 14	Northing:	729191.894	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	42.38	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.10 x 0.70 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
	0.05	TOPSOIL. MADE GROUND: grey slightly silty gravelly sand with some pottery fragments.			42.33				
	0.30	Soft light brown slightly sandy gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.		42.0	42.08	0.30	ES	MK44	
0.5									
	0.60	Soft light brown slightly sandy gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			41.78	0.70	B	MK45	
				41.5					
1.0						1.00	ES	MK46	
	1.10	Grey brown silty very sandy fine to coarse, angular to subrounded GRAVEL of various lithologies with high cobble content and low boulder content interbeded with very gravelly clay. Sand is fine to coarse. Cobbles and boulders are angular to subrounded of various lithologies (up to 400mm diameter).			41.28				
				41.0					
1.5									
				40.5					
2.0									
	2.30				40.08				
	2.30	Grey brown silty sandy fine to coarse, angular to subrounded GRAVEL of various lithologies with high cobble content and low boulder content interbeded with very gravelly clay. Sand is fine to coarse. Cobbles and boulders are angular to subrounded of various lithologies (up to 400mm diameter).		40.0	40.08				
2.5	2.50	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			39.88				
		Pit terminated at 2.50m		39.5					
3.0									

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP16**
Contract:	Dundrum Central Development	Easting:	717317.117	Date:	23/08/2021
Location:	Dundrum, Dublin 14	Northing:	729219.440	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	41.56	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.30 x 0.70 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.		41.5					
	0.10	MADE GROUND: black silty slightly gravelly sand with some bone fragments.			41.46				
	0.30	Soft brown sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles and boulders are angular to subrounded of various lithologies (up to 400mm diameter).			41.26	0.30	ES	MK47	
0.5				41.0		0.60	ES	MK48	
1.0	1.00	Firm grey brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			40.56				
	1.20	Firm becoming stiff grey brown sandy slightly gravelly silty CLAY with low cobble and boulder content and frequent gravel laminas. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles and boulders are angular to subrounded of various lithologies (up to 400mm diameter).		40.5	40.36	1.30	B	MK49	
1.5				40.0					▼
	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 400mm diameter).			39.66				
2.0				39.5					
2.5	2.50	**Pit terminated at 2.50m**		39.0	39.06	2.50	B	MK50	
3.0				38.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	1.70 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP17**
Contract:	Dundrum Central Development	Easting:	717200.401	Date:	30/08/2021
Location:	Dundrum, Dublin 14	Northing:	729124.677	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	43.46	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.40 x 0.70 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.							
	0.20	MADE GROUND: black slightly silty gravelly sand with low cobble content and some pottery fragments.			43.26	0.30	ES	MK51	
0.5	0.50	Soft light brown sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.		43.0	42.96	0.60	ES	MK52	
	0.70	Soft becoming firm grey brown slightly sandy gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			42.76				
1.0				42.5					
	1.10	Grey brown very silty sandy fine to coarse, angular to subrounded GRAVEL of various lithologies with medium cobble content and frequent clay bands. Sand is fine to coarse. Cobbles are angular to subrounded of various lithologies.			42.36				
1.5				42.0		1.50	B	MK53	▼
	1.90	Firm grey brown slightly sandy gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles and boulders are angular to subrounded of various lithologies (up to 400mm diameter).			41.56				
2.0				41.5					
	2.40				41.06				
2.5	2.50	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 400mm diameter).		41.0	40.96				
		Pit terminated at 2.50m							
3.0				40.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	1.80 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP18**
Contract:	Dundrum Central Development	Easting:	717217.891	Date:	30/08/2021
Location:	Dundrum, Dublin 14	Northing:	729130.297	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	43.22	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	4.10 x 1.90 x 1.90	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.							
	0.15	MADE GROUND: grey slightly silty gravelly sand with low cobble content and some bone, pottery and red brick fragments.		43.0	43.07	0.30	ES	MK54	
0.5	0.45	Soft light brown slightly sandy gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			42.77				
	0.60	Soft becoming firm grey brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.		42.5	42.62				
1.0						1.00	ES	MK55	
				42.0					
1.5						1.50	B	MK56	
	1.70	Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles and boulders are angular to subrounded of various lithologies (up to 400mm diameter).		41.5	41.52				
	1.90	Obstruction - boulders.			41.32				
2.0		**Pit terminated at 1.90m**							
				41.0					
2.5									
				40.5					
3.0									

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP19**
Contract:	Dundrum Central Development	Easting:	717253.959	Date:	30/08/2021
Location:	Dundrum, Dublin 14	Northing:	729136.456	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	42.93	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.30 x 0.70 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.							
	0.30	MADE GROUND: dark grey slightly silty gravelly sand with low cobble content and some bone, plastic bags and red brick fragments.			42.63	0.30	ES	MK57	
0.5				42.5					
	0.70	Soft light brown slightly sandy gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			42.23	0.80	ES	MK58	
	0.90	Grey brown silty very sandy fine to coarse, angular to subrounded GRAVEL of various lithologies with high cobble content and low boulder content interbeded with very gravelly clay. Sand is fine to coarse. Cobbles and boulders are angular to subrounded of various lithologies (up to 400mm diameter).		42.0	42.03				
1.0									
1.5				41.5		1.50	B	MK59	
2.0				41.0					
	2.20	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		40.5	40.73				
2.5	2.50	**Pit terminated at 2.50m**			40.43				
3.0				40.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	2.10 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP20**
Contract:	Dundrum Central Development	Easting:	717097.828	Date:	31/08/2021
Location:	Dundrum, Dublin 14	Northing:	729043.115	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	45.17	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.40 x 0.70 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
	0.05	TOPSOIL. MADE GROUND: grey gravelly angular cobbles.		45.0	45.12				
	0.40	MADE GROUND: grey brown sandy slightly gravelly silty clay with low cobble content and some red brick fragments.			44.77	0.40	ES	MK60	
0.5				44.5					
	0.70	Firm brown slightly sandy gravelly silty CLAY with high cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			44.47	0.80	ES	MK61	
1.0	1.00	Firm becoming stiff grey brown slightly sandy gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.		44.0	44.17				
1.5						1.50	B	MK62	
				43.5					
	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 400mm diamater).			43.27				
2.0				43.0					
2.5	2.50	**Pit terminated at 2.50m**			42.67				
				42.5					
3.0									
				42.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP22**
Contract:	Dundrum Central Development	Easting:	717191.571	Date:	30/08/2021
Location:	Dundrum, Dublin 14	Northing:	729077.467	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	43.94	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.50 x 0.65 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.							
	0.20	MADE GROUND: grey brown sandy slightly gravelly silty clay with low cobble content and some red brick and pottery fragments.			43.74	0.30	ES	MK63	
0.5				43.5					
	0.70	Soft brown sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			43.24				
	0.90	Firm grey brown slightly sandy gravelly silty CLAY with low cobble content and occasional gravel laminas. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.		43.0	43.04	1.00	ES	MK64	
1.0									
1.5				42.5		1.50	B	MK65	▼
2.0				42.0					
	2.20	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 400mm diameter).			41.74				
2.5	2.50	**Pit terminated at 2.50m**		41.5	41.44				
3.0				41.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	1.50 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP23**
Contract:	Dundrum Central Development	Easting:	717249.227	Date:	23/08/2021
Location:	Dundrum, Dublin 14	Northing:	729086.732	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	43.57	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.70 x 0.70 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
	0.10	TOPSOIL.		43.5	43.47				
		MADE GROUND: grey brown silty gravelly sand with low cobble content and some red brick, pottery and bone fragments.				0.30	ES	MK66	
0.5	0.50	Soft light brown sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.		43.0	43.07	0.80	ES	MK67	
1.0	1.00	Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble content and occasional sand laminas. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.		42.5	42.57				
1.5				42.0		1.50	B	MK68	
2.0	2.10	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 400mm diameter).		41.5	41.47				
2.5	2.50	**Pit terminated at 2.50m**		41.0	41.07				
3.0				40.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP24**
Contract:	Dundrum Central Development	Easting:	717267.340	Date:	23/08/2021
Location:	Dundrum, Dublin 14	Northing:	729099.545	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	43.92	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.50 x 0.70 x 2.60	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
	0.05	TOPSOIL.			43.87				
		MADE GROUND: grey silty gravelly sand with high cobble content and some concrete and stone brick fragments.				0.30	ES	MK69	
	0.40				43.52				
0.5		MADE GROUND: grey brown silty gravelly sand with high cobble content and some pottery fragments.		43.5					
	0.90				43.02				
1.0		MADE GROUND: grey brown sandy slightly gravelly silty clay with low cobble content and some red brick and pottery fragments.		43.0		1.00	ES	MK70	
	1.10				42.82				
		Soft light brown sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.							
	1.40				42.52				
1.5		Firm grey brown sandy slightly gravelly silty CLAY with high cobble content and occasional sand laminas. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.		42.5		1.50	B	MK71	
2.0				42.0					
2.5				41.5					
	2.60	**Pit terminated at 2.60m**			41.32				
3.0				41.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP25**
Contract:	Dundrum Central Development	Easting:	717124.211	Date:	19/08/2021
Location:	Dundrum, Dublin 14	Northing:	729009.977	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	44.91	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.60 x 0.70 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.							
	0.10	MADE GROUND: grey brown silty gravelly sand with low cobble content and some red brick and pottery fragments.			44.81				
				44.5		0.30	ES	MK72	
0.5									
	0.70	Soft light brown sandy slightly gravelly silty CLAY with high cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			44.21				
				44.0					
1.0						1.00	ES	MK73	
	1.30	Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content and some sand laminas. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles and boulders are angular to subrounded of various lithologies (up to 300mm diameter).			43.61				
				43.5					
1.5						1.50	B	MK74	
				43.0					
2.0									
	2.40			42.5	42.51				
2.5	2.50	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 400mm diameter). **Pit terminated at 2.50m**			42.41	2.50	B	MK75	
				42.0					
3.0									

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	2.10 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP26**
Contract:	Dundrum Central Development	Easting:	717162.543	Date:	19/08/2021
Location:	Dundrum, Dublin 14	Northing:	729028.032	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	44.86	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.40 x 0.70 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.			44.76				
	0.10	MADE GROUND: grey brown silty gravelly sand with low cobble content and some red brick and pottery fragments.		44.5		0.30	ES	MK76	
0.5									
				44.0					
1.0									
	1.10	Soft light brown sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			43.76	1.20	ES	MK77	
	1.30	Firm grey brown slightly sandy gravelly silty CLAY with high cobble content and frequent gravel laminas. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.		43.5	43.56	1.50	B	MK78	
1.5									
				43.0					
2.0									
				42.5					
2.5	2.50	**Pit terminated at 2.50m**			42.36				
				42.0					
3.0									

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	1.90 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP27**
Contract:	Dundrum Central Development	Easting:	717196.339	Date:	30/08/2021
Location:	Dundrum, Dublin 14	Northing:	729050.889	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	43.80	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.60 x 0.70 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.							
	0.20	MADE GROUND: grey brown sandy slightly gravelly silty clay with low cobble content and some bone fragments.			43.60				
				43.5		0.30	ES	MK79	
0.5	0.50	Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content and occasional gravel laminas. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles and boulders are angular to subrounded of various lithologies (up to 300mm diameter).			43.30				
				43.0					
1.0						1.00	ES	MK80	
				42.5					
1.5						1.50	B	MK81	
				42.0					▼
2.0									
	2.10	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 400mm diameter).			41.70				
				41.5					
2.5	2.50	**Pit terminated at 2.50m**			41.30				
				41.0					
3.0									

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	1.80 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP28**
Contract:	Dundrum Central Development	Easting:	717273.304	Date:	20/08/2021
Location:	Dundrum, Dublin 14	Northing:	729052.714	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	43.86	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.40 x 0.70 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.							
	0.15	MADE GROUND: grey brown silty gravelly sand with low cobble content and some red brick and pottery fragments.			43.71	0.30	ES	MK82	
0.5	0.45	Soft light brown sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.		43.5	43.41				
	0.80	Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content and occasional sand laminas. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles and boulders are angular to subrounded of various lithologies (up to 300mm diameter).		43.0	43.06				
1.0						1.00	ES	MK83	
1.5				42.5		1.50	B	MK84	
2.0				42.0					
	2.20	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 400mm diameter).		41.5	41.66				
2.5	2.50	**Pit terminated at 2.50m**			41.36				
3.0				41.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP29**
Contract:	Dundrum Central Development	Easting:	717324.760	Date:	20/08/2021
Location:	Dundrum, Dublin 14	Northing:	729067.262	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	43.40	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.50 x 0.70 x 2.40	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
	0.10	TOPSOIL.			43.30				
		MADE GROUND: grey brown sandy slightly gravelly silty clay with medium cobble content and some red brick and bone fragments.				0.30	ES	MK85	
0.5				43.0					
	0.60				42.80				
	0.70	Soft light brown sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			42.70				
		Firm grey brown slightly sandy gravelly silty CLAY with medium cobble and low boulder content and occasional sand laminas. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles and boulders are angular to subrounded of various lithologies (up to 300mm diameter).		42.5		1.00	ES	MK86	
1.0									
1.5				42.0		1.50	B	MK87	
				41.5					
2.0									
	2.10	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 400mm diameter).			41.30				
	2.40	Obstruction - boulders.		41.0	41.00				
2.5		**Pit terminated at 2.40m**							
				40.5					
3.0									

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	Ceramic drainage pipe at 1.00mbgl.	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP30**
Contract:	Dundrum Central Development	Easting:	717136.958	Date:	19/08/2021
Location:	Dundrum, Dublin 14	Northing:	728977.260	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	44.78	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.30 x 0.70 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
	0.05	TOPSOIL. MADE GROUND: grey brown silty gravelly sand with low cobble content and some pottery fragments.			44.73				
				44.5		0.30	ES	MK88	
0.5	0.50	Soft light brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			44.28				
						0.60	B	MK89	
				44.0					
						0.90	ES	MK90	
1.0									
	1.10	Firm grey brown slightly sandy gravelly silty CLAY with high cobble content and occasional sand laminas. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			43.68				▼
				43.5					
1.5									
				43.0					
2.0	2.00	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 400mm diameter).			42.78				
				42.5					
2.5	2.50	**Pit terminated at 2.50m**			42.28				
				42.0					
3.0									

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	1.30 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP31**
Contract:	Dundrum Central Development	Easting:	717176.242	Date:	19/08/2021
Location:	Dundrum, Dublin 14	Northing:	728991.286	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	44.56	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.00 x 0.70 x 2.60	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.		44.5					
	0.15	MADE GROUND: grey brown silty gravelly sand with low cobble content and some red brick and pottery fragments.			44.41	0.30	ES	MK91	
0.5	0.50	Soft light brown sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.		44.0	44.06	0.80	B	MK92	
1.0				43.5					
	1.10	Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble content and some sand laminas. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			43.46				
1.5				43.0		1.50	ES	MK93	▼
2.0						1.90	B	MK94	
	2.30	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 400mm diameter).		42.5	42.26				
2.5	2.60	**Pit terminated at 2.60m**		42.0	41.96				
3.0				41.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	1.80 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP32**
Contract:	Dundrum Central Development	Easting:	717215.982	Date:	19/08/2021
Location:	Dundrum, Dublin 14	Northing:	729002.741	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	44.27	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.60 x 0.60 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
	0.10	TOPSOIL.			44.17				
		MADE GROUND: grey brown silty gravelly sand with low cobble content and some red brick, pottery and bone fragments.		44.0		0.30	ES	MK95	
0.5	0.50	Soft light brown sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			43.77				
				43.5		0.80	B	MK96	
	0.90	Firm grey brown slightly sandy gravelly silty CLAY with high cobble content and occasional sand laminas. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			43.37				
1.0						1.00	ES	MK97	
				43.0					
1.5									▼
				42.5					
2.0									
	2.20	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 400mm diameter).			42.07				
				42.0					
2.5	2.50	**Pit terminated at 2.50m**			41.77	2.50	B	MK98	
				41.5					
3.0									

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	1.60 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP33**
Contract:	Dundrum Central Development	Easting:	717251.879	Date:	19/08/2021
Location:	Dundrum, Dublin 14	Northing:	729014.955	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	44.29	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.50 x 0.60 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
	0.00	TOPSOIL.			44.29				
		MADE GROUND: grey brown silty gravelly sand with low cobble content and some red brick and bone fragments.		44.0		0.30	ES	MK99	
0.5									
	0.60	MADE GROUND: grey brown sandy gravelly silty clay with medium cobble content and some red brick fragments.			43.69				
				43.5					
1.0						1.00	ES	MK100	
	1.10	Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			43.19				
				43.0					
1.5						1.50	B	MK101	
				42.5					
2.0									
	2.20	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 400mm diameter).			42.09				
				42.0					
2.5	2.50	**Pit terminated at 2.50m**			41.79				
				41.5					
3.0									

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP34**
Contract:	Dundrum Central Development	Easting:	717290.009	Date:	20/08/2021
Location:	Dundrum, Dublin 14	Northing:	729024.903	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	44.02	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.10 x 0.70 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.							
	0.15	MADE GROUND: grey brown silty gravelly sand with high cobble content and some red brick, pottery and bone fragments.			43.87	0.30	ES	MK102	
0.5				43.5					
	0.60	Soft light brown sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			43.42	0.80 0.80	B ES	MK103 MK104	
1.0	1.00	Firm grey brown slightly sandy gravelly silty CLAY with high cobble and low boulder content and occasional sand laminas. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles and boulders are angular to subrounded of various lithologies (up to 300mm diameter).		43.0	43.02				
1.5				42.5					▼
2.0				42.0					
	2.20	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 400mm diameter).			41.82	2.20	B	MK105	
2.5	2.50	**Pit terminated at 2.50m**		41.5	41.52				
3.0				41.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	1.50 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP35**
Contract:	Dundrum Central Development	Easting:	717329.846	Date:	20/08/2021
Location:	Dundrum, Dublin 14	Northing:	729039.443	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	43.64	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.50 x 0.70 x 2.50	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
		TOPSOIL.		43.5					
	0.20	MADE GROUND: grey brown silty gravelly sand with medium cobble content and some red brick, pottery and bone fragments.			43.44	0.30	ES	MK106	
0.5	0.50	Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble content and occasional sand laminas. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.		43.0	43.14				
1.0						1.00 1.00	B ES	MK107 MK108	
				42.5					
1.5									
				42.0					
2.0									
	2.10	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 400mm diameter).		41.5	41.54				
2.5	2.50	**Pit terminated at 2.50m**			41.14	2.50	B	MK109	
				41.0					
3.0									
				40.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth	Pit walls stable.	Dry	Ceramic drainage pipe at 1.10mbgl.	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5811	**Trial Pit Log**				Trial Pit No: **TP36**
Contract:	Dundrum Central Development	Easting:	717307.779	Date:	23/08/2021
Location:	Dundrum, Dublin 14	Northing:	729278.564	Excavator:	JCB 3CX
Client:	Land Development Agency	Elevation:	41.83	Logged By:	M. Kaliski
Engineer:	Barrett Mahony	Dimensions (LxWxD) (m):	3.20 x 0.70 x 2.00	Status:	FINAL

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples / Field Tests Depth	Type	Result	Water Strike
	0.05	TOPSOIL.			41.78				
		MADE GROUND: black silty gravelly sand with medium cobble content and some red brick, ash and plastic bag fragments.		41.5		0.30	ES	MK110	
0.5	0.50	MADE GROUND: brown sandy gravelly silty clay with low cobble content and some red brick and pottery fragments.			41.33				
				41.0		0.80	ES	MK111	
1.0									
	1.10	Grey brown silty gravelly fine to coarse SAND with low cobble content and occasional clay bands and gravel laminas. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			40.73				
				40.5		1.30	B	MK112	
1.5	1.50	Firm grey brown slightly sandy gravelly silty CLAY with medium cobble content and occasional sand laminas. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of various lithologies. Cobbles are angular to subrounded of various lithologies.			40.33				
				40.0					
2.0	2.00	Obstruction - boulders.			39.83				
		Pit terminated at 2.00m							
				39.5					
2.5									
				39.0					
3.0									

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry		B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

TP01 Sidewall



TP01 Spoil



TP02 Sidewall



TP02 Spoil



TP03 Sidewall



TP03 Spoil



TP04 Sidewall



TP04 Spoil



TP05 Sidewall



TP05 Spoil



TP06 Sidewall



TP06 Spoil



TP07 Sidewall



TP07 Spoil



TP08 Sidewall



TP08 Spoil



TP09 Sidewall



TP09 Spoil



TP10 Sidewall



TP10 Spoil



TP11 Sidewall



TP11 Spoil



TP12 Sidewall



TP12 Spoil



TP13 Sidewall



TP13 Spoil



TP14 Sidewall



TP14 Spoil



TP15 Sidewall



TP15 Spoil



TP16 Sidewall



TP16 Spoil



TP17 Sidewall



TP17 Spoil



TP18 Sidewall



TP18 Spoil



TP19 Sidewall



TP19 Spoil



TP20 Sidewall



TP20 Spoil



TP22 Sidewall



TP22 Spoil



TP23 Sidewall



TP23 Spoil



TP24 Sidewall



TP24 Spoil



TP25 Sidewall



TP25 Spoil



TP26 Sidewall



TP26 Spoil



TP27 Sidewall



TP27 Spoil



TP28 Sidewall



TP28 Spoil



TP29 Sidewall



TP29 Spoil



TP30 Sidewall



TP30 Spoil



TP31 Sidewall



TP31 Spoil



TP32 Sidewall



TP32 Spoil



TP33 Sidewall



TP33 Spoil



TP34 Sidewall



TP34 Spoil



TP35 Sidewall



TP35 Spoil



TP36 Sidewall



TP36 Spoil



Appendix 3

Soakaway Test Results and Photographs

SOAKAWAY TEST

Project Reference:	5811
Contract name:	Dundrum Central Development
Location:	Drundrum, Dublin 14
Test No:	SA01
Date:	17/08/2021

Ground Conditions

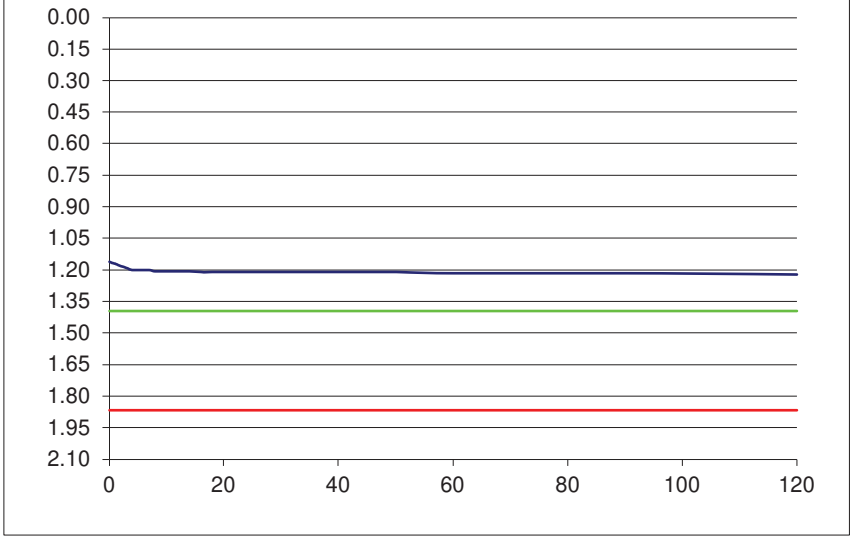
From	To	
0.00	0.10	TOPSOIL.
0.10	0.80	MADE GROUND: brown silty gravelly sand with high cobble content, shell fragments and some red brick and glass fragments.
0.80	1.90	Grey silty sandy GRAVEL with high cobble content.
1.90	2.10	Stiff black sandy slightly gravelly silty CLAY with high cobble content.

Remarks:

-

Elapsed Time (mins)	Fall of Water (m)
0	1.16
0.5	1.17
1	1.17
1.5	1.18
2	1.18
2.5	1.19
3	1.19
3.5	1.20
4	1.20
4.5	1.20
5	1.20
6	1.20
7	1.20
8	1.21
9	1.21
10	1.21
12	1.21
14	1.21
16	1.21
18	1.21
20	1.21
25	1.21
30	1.21
40	1.21
50	1.21
60	1.22
75	1.22
90	1.22
120	1.22

Pit Dimensions (m)		
Length (m)	2.60	m
Width (m)	0.60	m
Depth	2.10	m
Water		
Start Depth of Water	1.16	m
Depth of Water	0.94	m
75% Full	1.40	m
25% Full	1.87	m
75%-25%	0.47	m
Volume of water (75%-25%)	**0.73**	m3
Area of Drainage	**13.44**	m2
Area of Drainage (75%-25%)	**4.57**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **Fail** m/min or **Fail** m/s

SOAKAWAY TEST

Project Reference:	5811
Contract name:	Dundrum Central Development
Location:	Drundrum, Dublin 14
Test No:	SA02
Date:	17/08/2021

Ground Conditions

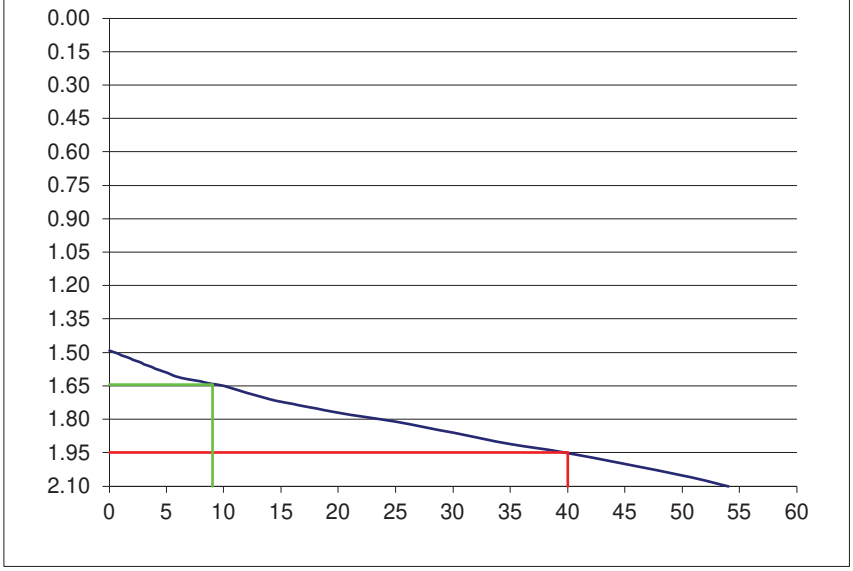
From	To	
0.00	0.30	TOPSOIL.
0.30	2.10	MADE GROUND: grey silty gravelly sand with medium cobble content and some ceramic pipe, concrete, red brick, mortar, glass, ash and pottery fragments.

Remarks:

-

Elapsed Time (mins)	Fall of Water (m)
0	1.49
0.5	1.50
1	1.51
1.5	1.52
2	1.53
2.5	1.54
3	1.55
3.5	1.56
4	1.57
4.5	1.58
5	1.59
6	1.61
7	1.62
8	1.63
9	1.64
10	1.65
12	1.68
14	1.71
16	1.73
18	1.75
20	1.77
25	1.81
30	1.86
35	1.91
40	1.95
50	2.05
54	2.10

Pit Dimensions (m)		
Length (m)	2.90	m
Width (m)	0.60	m
Depth	2.10	m
Water		
Start Depth of Water	1.49	m
Depth of Water	0.61	m
75% Full	1.64	m
25% Full	1.95	m
75%-25%	0.31	m
Volume of water (75%-25%)	**0.53**	m3
Area of Drainage	**14.70**	m2
Area of Drainage (75%-25%)	**3.88**	m2
Time		
75% Full	9	min
25% Full	40	min
Time 75% to 25%	**31**	min
Time 75% to 25% (sec)	**1860**	sec



f = 0.00442 m/min or **7.36E-05 m/s**

SOAKAWAY TEST

Project Reference:	5811
Contract name:	Dundrum Central Development
Location:	Drundrum, Dublin 14
Test No:	SA03
Date:	17/08/2021

Ground Conditions

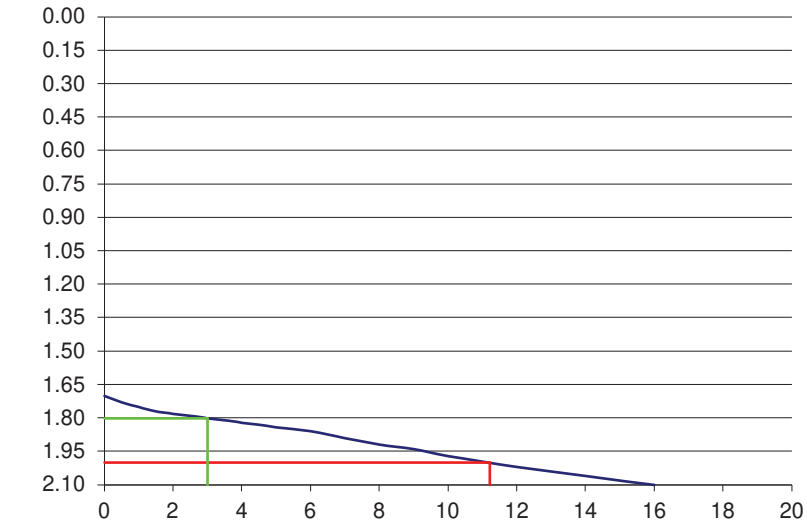
From	To	
0.00	0.20	TOPSOIL.
0.20	0.50	Brown silty gravelly SAND with medium cobble content.
0.50	1.10	Brown silty sandy GRAVEL with high cobble content.
1.10	2.10	Grey silty very gravelly SAND with high cobble content.

Remarks:

1000l added to pit and water level only rose to 1.70mbgl.

Elapsed Time (mins)	Fall of Water (m)
0	1.70
0.5	1.73
1	1.75
1.5	1.77
2	1.78
2.5	1.79
3	1.80
3.5	1.81
4	1.82
4.5	1.83
5	1.84
6	1.86
7	1.89
8	1.92
9	1.94
10	1.97
12	2.02
14	2.06
16	2.10

Pit Dimensions (m)		
Length (m)	2.20	m
Width (m)	0.60	m
Depth	2.10	m
Water		
Start Depth of Water	1.70	m
Depth of Water	0.40	m
75% Full	1.80	m
25% Full	2.00	m
75%-25%	0.20	m
Volume of water (75%-25%)	**0.26**	m3
Area of Drainage	**11.76**	m2
Area of Drainage (75%-25%)	**2.44**	m2
Time		
75% Full	3	min
25% Full	11.2	min
Time 75% to 25%	**8.2**	min
Time 75% to 25% (sec)	**492**	sec



f = 0.01319 m/min or **2.20E-04 m/s**

SOAKAWAY TEST

Project Reference:	5811
Contract name:	Dundrum Central Development
Location:	Drundrum, Dublin 14
Test No:	SA04
Date:	17/08/2021

Ground Conditions

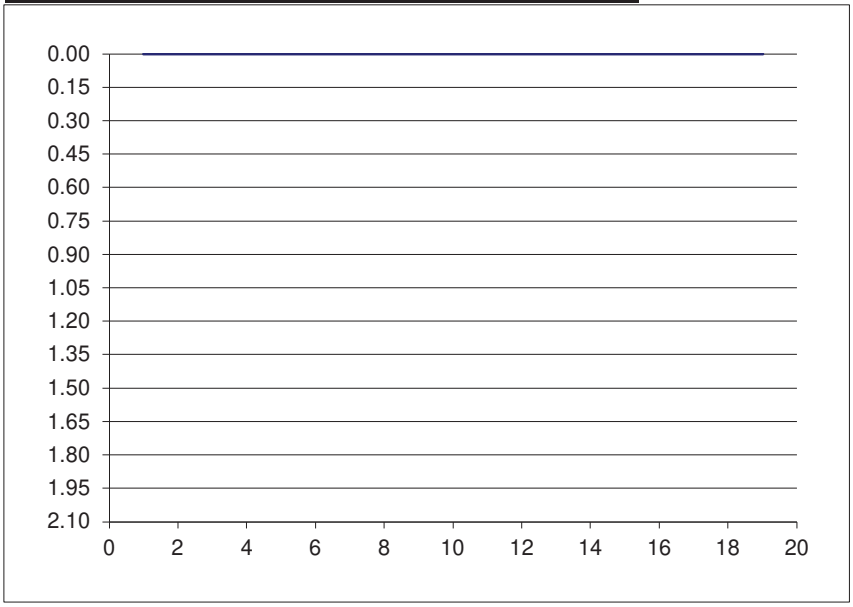
From	To	
0.00	0.35	TOPSOIL.
0.35	0.60	Soft brown slightly sandy slightly gravelly silty CLAY.
0.60	2.10	Firm grey brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content with occasional sandy gravel laminas.

Remarks:

Water ingresses at 1.90mbgl - soils already saturated and unsuitable for soakaway design.

Elapsed Time (mins)	Fall of Water (m)
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-

Pit Dimensions (m)		
Length (m)	2.30	m
Width (m)	0.60	m
Depth	2.10	m
Water		
Start Depth of Water	-	m
Depth of Water	-	m
75% Full	-	m
25% Full	-	m
75%-25%	-	m
Volume of water (75%-25%)	**-**	m3
Area of Drainage	**-**	m2
Area of Drainage (75%-25%)	**-**	m2
Time		
75% Full	-	min
25% Full	-	min
Time 75% to 25%	**-**	min
Time 75% to 25% (sec)	**-**	sec



f = **Fail** **m/min** or **Fail** **m/s**

SA01 Sidewall



SA01 Spoil



SA02 Sidewall



SA02 Spoil



SA03 Sidewall



SA03 Spoil



SA04 Sidewall



SA04 Spoil

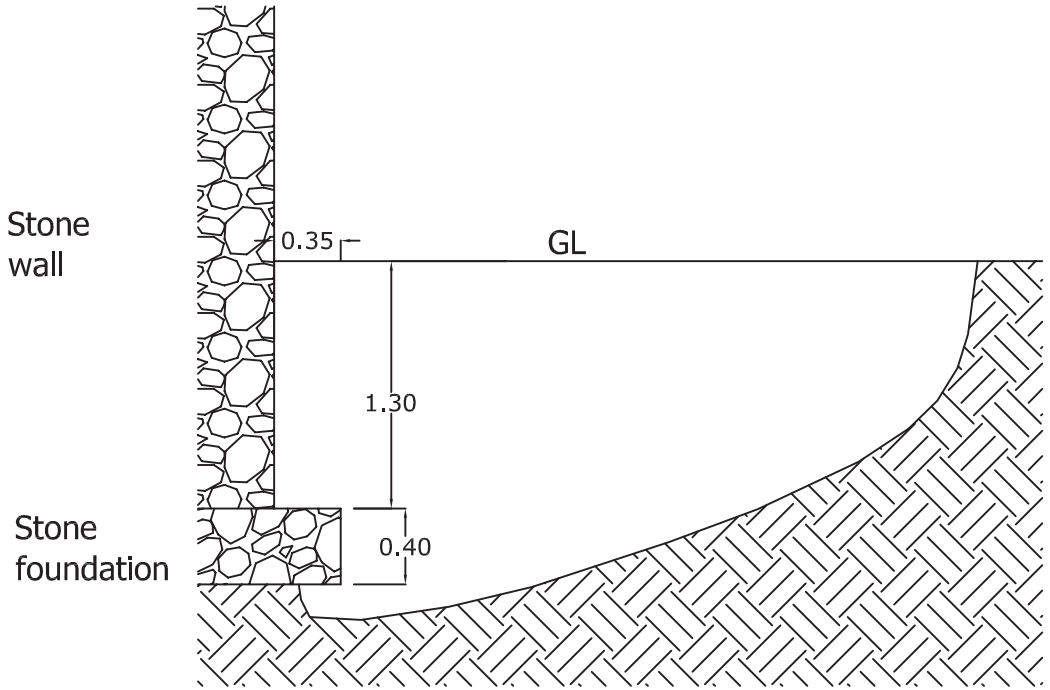


Appendix 4

Foundation Pit Logs

FI01

Cross Section



Length:	Width:	Depth:
3.70m	0.70m	2.10m

Trench Dimensions

Point:	Easting:	Northing:	Level:
Start	716910.225	729174.568	43.93

Ground Conditions:

Depth:	Description:
0.00-0.10	TOPSOIL.
0.10-0.80	MADE GROUND: grey brown silty gravelly sand with low cobble content and some glass, bones and red brick fragments.
0.80-1.70	MADE GROUND: grey silty sandy gravel with low cobble and boulder content and some pottery fragments.
1.70-2.10	Stiff grey brown slightly sandy gravelly silty CLAY with high cobble content.

Photograph:

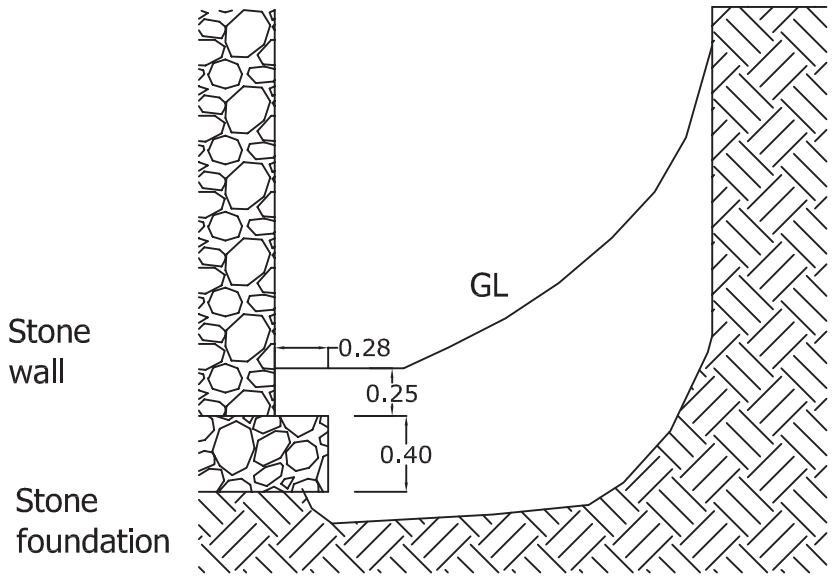


SITE INVESTIGATIONS LTD

Project:	Dundrum Central Development	Logged by: M. Kaliski	Excavation Started: 18/08/2021	Excavation Finished: 18/08/2021	CONTRACT NUMBER
Client:	Land Development Agency	Scale: NOT TO SCALE, ALL DISTANCES IN m			5811
Consultant:	Barrett Mahony	DEPTH ARE TO THE TOP OF SERVICES			

FI03

Cross Section



Ground Conditions:

Depth:	Description:
0.00-0.10	TOPSOIL.
0.10-0.80	MADE GROUND: black slightly silty gravelly gravelly sand with low cobble content and some plastic bag, red brick and bone fragments.
	Strong anaerobic smell

Photograph:



Length:	Width:	Depth:
2.30m	0.70m	0.80m

Trench Dimensions

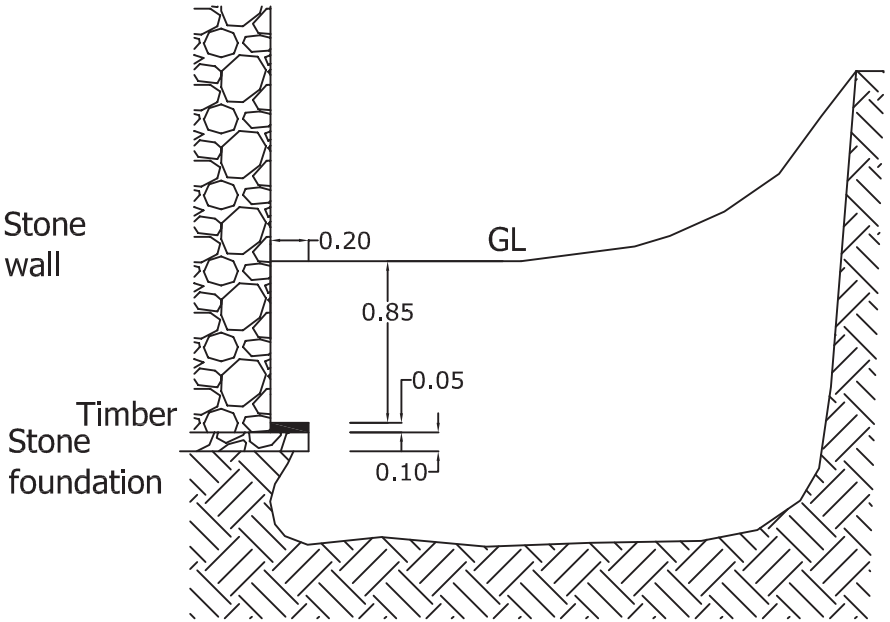
Point:	Easting:	Northing:	Level:
Start	717262.068	729304.529	42.86

SITE INVESTIGATIONS LTD

Project:	Dundrum Central Development	Logged by: M. Kaliski	Excavation Started: 27/08/2021	Excavation Finished: 27/08/2021	CONTRACT NUMBER
Client:	Land Development Agency	Scale: NOT TO SCALE, ALL DISTANCES IN m			5811
Consultant:	Barrett Mahony	DEPTH ARE TO THE TOP OF SERVICES			

FI04

Cross Section



Ground Conditions:

Depth:	Description:
0.00-0.20	TOPSOIL.
0.20-0.40	MADE GROUND: black silty gravelly sand with some rag, plastic and glass fragments.
0.40-1.50	Grey slightly silty very sandy GRAVEL with medium cobble content.
1.00	Slow water ingress.

Photograph:



Trench Dimensions

Length:	Width:	Depth:
3.00m	0.75m	1.50m

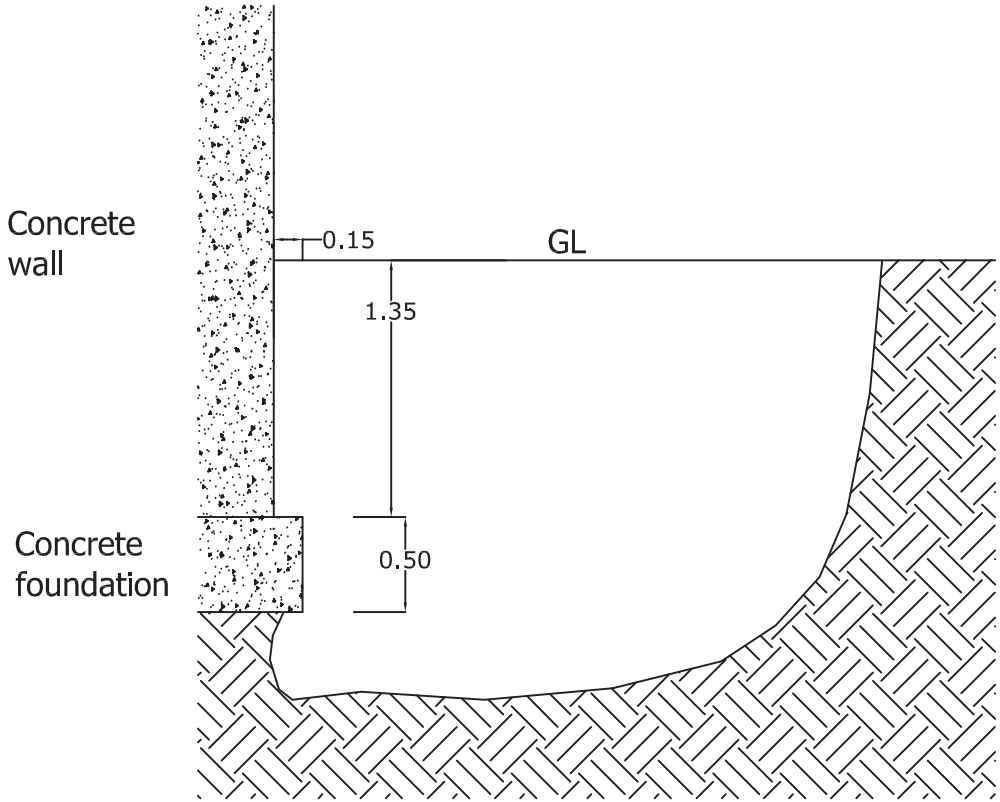
Point:	Easting:	Northing:	Level:
Start	717351.212	729223.666	40.78

SITE INVESTIGATIONS LTD

Project:	Dundrum Central Development	Logged by: M. Kaliski	Excavation Started: 27/08/2021	Excavation Finished: 27/08/2021	CONTRACT NUMBER
Client:	Land Development Agency	Scale: NOT TO SCALE, ALL DISTANCES IN m			5811
Consultant:	Barrett Mahony	DEPTH ARE TO THE TOP OF SERVICES			

FI05

Cross Section



Length:	Width:	Depth:
3.20m	0.80m	2.30m

Trench Dimensions

Point:	Easting:	Northing:	Level:
Start	717356.448	729080.664	43.13

Ground Conditions:

Depth:	Description:
0.00-0.30	TOPSOIL.
0.30-0.60	MADE GROUND: black silty gravelly sand with with some red brick, bone, pottery and glass fragments.
0.60-0.80	MADE GROUND: grey sandy gravelly silty clay with low cobble content and some red brick fragments.
0.80-2.30	Firm light grey slightly sandy gravelly silty CLAY with medium cobble content.
1.00	Strong water inflow from drainage pipe

Photograph:

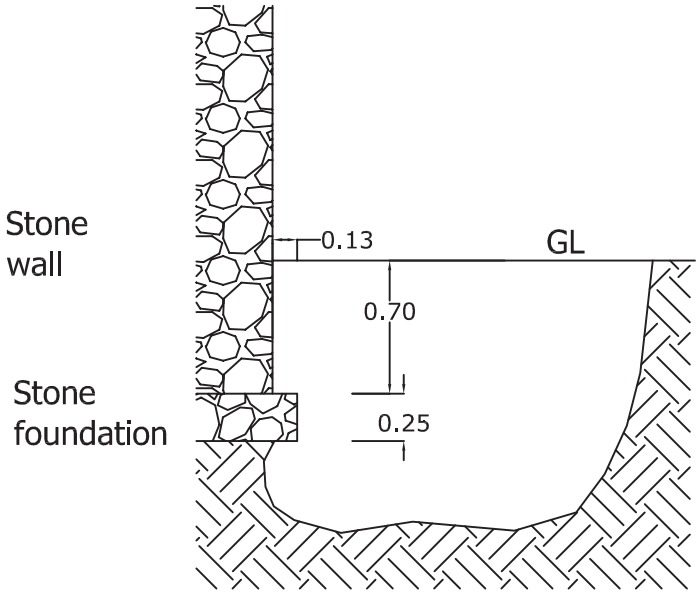


SITE INVESTIGATIONS LTD

Project:	Dundrum Central Development	Logged by: M. Kaliski	Excavation Started: 20/08/2021	Excavation Finished: 20/08/2021	CONTRACT NUMBER
Client:	Land Development Agency	Scale: NOT TO SCALE, ALL DISTANCES IN m			5811
Consultant:	Barrett Mahony	DEPTH ARE TO THE TOP OF SERVICES			

FI06

Cross Section



Ground Conditions:

Depth:	Description:
0.00-0.10	TOPSOIL.
0.10-1.20	MADE GROUND: light grey brown sandy gravelly silty clay with medium cobble content and some red brick and plastic bag fragments.
1.20-1.40	Firm grey brown slightly sandy gravelly silty CLAY with medium cobble content.
0.80	Seepage

Photograph:



Trench Dimensions

Length:	Width:	Depth:
2.00m	0.70m	1.40m

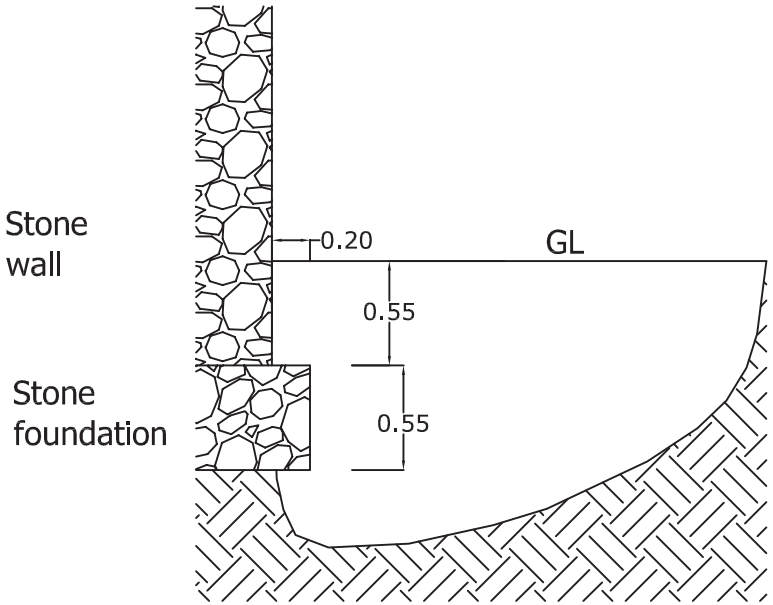
Point:	Easting:	Northing:	Level:
Start	717192.237	728958.320	44.56

SITE INVESTIGATIONS LTD

Project:	Dundrum Central Development	Logged by: M. Kaliski	Excavation Started: 18/08/2021	Excavation Finished: 18/08/2021	CONTRACT NUMBER
Client:	Land Development Agency	Scale: NOT TO SCALE, ALL DISTANCES IN m			5811
Consultant:	Barrett Mahony	DEPTH ARE TO THE TOP OF SERVICES			

FI07

Cross Section



Ground Conditions:

Depth:	Description:
0.00-0.05	TOPSOIL.
0.05-0.50	MADE GROUND: black silty sandy gravel with low cobble content and some ashes.
0.50-1.50	Grey silty sandy GRAVEL with high cobble content.
0.60	Seepage.

Photograph:



Trench Dimensions

Length:	Width:	Depth:
2.60m	0.70m	1.50m

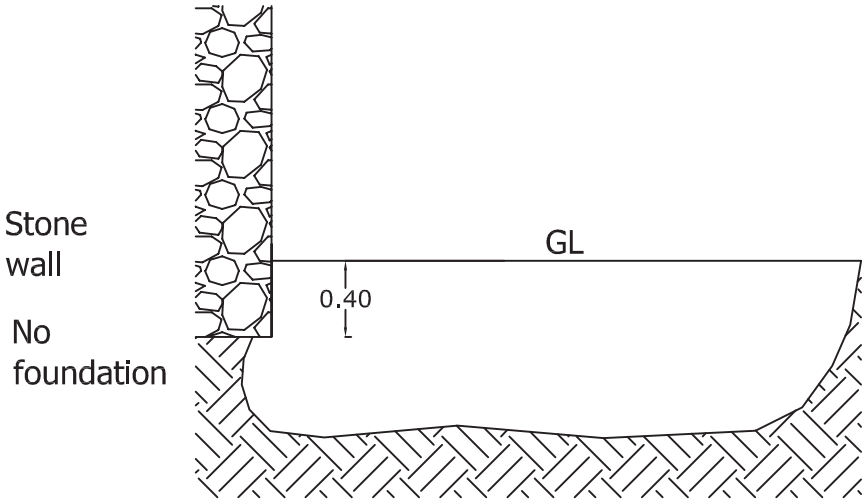
Point:	Easting:	Northing:	Level:
Start	717092.842	728976.654	44.97

SITE INVESTIGATIONS LTD

Project:	Dundrum Central Development	Logged by: M. Kaliski	Excavation Started: 18/08/2021	Excavation Finished: 18/08/2021	CONTRACT NUMBER
Client:	Land Development Agency	Scale: NOT TO SCALE, ALL DISTANCES IN m			5811
Consultant:	Barrett Mahony	DEPTH ARE TO THE TOP OF SERVICES			

FI08

Cross Section



Ground Conditions:

Depth:	Description:
0.00-0.05	TOPSOIL.
0.05-0.20	MADE GROUND: black very sandy gravel with some slag, ashes and red brick fragments.
0.20-0.60	MADE GROUND: grey brown silty sandy gravel with high cobble content and some red brick fragments.
0.60-0.90	Grey brown silty sandy GRAVEL with high cobble content.

Photograph:



Trench Dimensions

Length:	Width:	Depth:
3.10m	0.70m	0.90m

Point:	Easting:	Northing:	Level:
Start	717065.834	719097.195	45.25

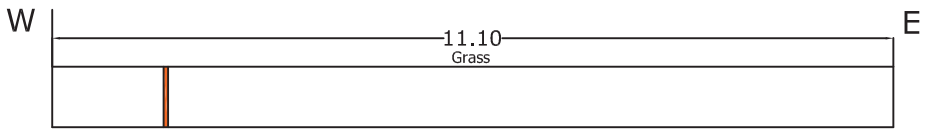
SITE INVESTIGATIONS LTD

Project:	Dundrum Central Development	Logged by: M. Kaliski	Excavation Started: 18/08/2021	Excavation Finished: 18/08/2021	CONTRACT NUMBER
Client:	Land Development Agency	Scale: NOT TO SCALE, ALL DISTANCES IN m			5811
Consultant:	Barrett Mahony	DEPTH ARE TO THE TOP OF SERVICES			

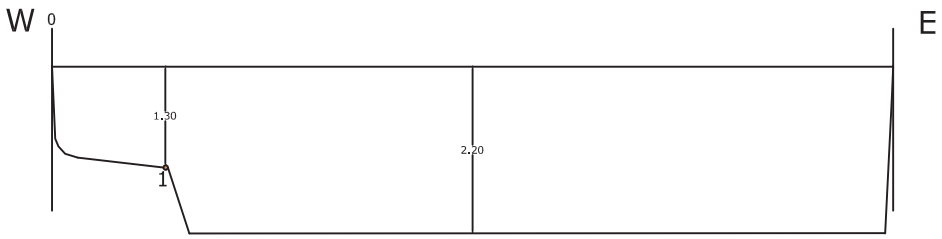
Appendix 5
Slit Trench Logs

ST01

Plan



Cross Section



Point:	Easting:	Northing:	Level:
Pipe	717223.751	729038.943	44.03
End	717233.063	729044.609	43.89

Length:	Width:	Depth:
11.10m	0.80m	2.20m

Services

No:	Diameter:	Colour:	Utility:	Distance:	Depth:	Alignment:
1	60mm	Ceramic	Land	1.50m*	1.30m	90°

*Exact distance not measured - distance used is guide.

Ground Conditions

From:	To:	Description:
0.00m	0.20m	TOPSOIL.
0.20m	0.40m	MADE GROUND: grey brown slightly sandy slightly gravelly silty clay with some red brick and glass fragments.
0.40m	0.80m	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content.
0.80m	2.10m	Firm grey brown slightly sandy slightly gravelly silty CLAY with medium cobble content.
2.10m	2.20m	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble content.

Photographs







SITE INVESTIGATIONS LTD

Project:	Dundrum Central Development
Client:	Land Development Agency
Consultant:	Barrett Mahony

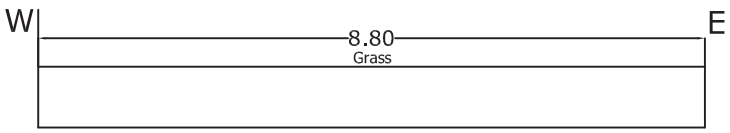
Logged by:	Excavation Started:	Excavation Finished:	CONTRACT NUMBER
M. Kaliski	18/08/2021	18/08/2021	5811

Scale: NOT TO SCALE, ALL DISTANCES IN m

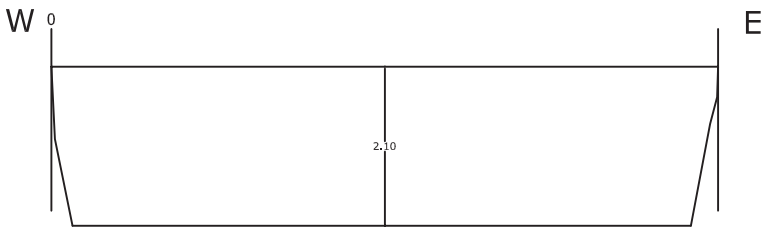
DEPTH ARE TO THE TOP OF SERVICES

ST02

Plan



Cross Section



Point:	Easting:	Northing:	Level:
Pipe	717249.249	729028.909	44.06
End	717256.341	729035.083	44.14

Length:	Width:	Depth:
8.80m	0.80m	2.10m

Services

No:	Diameter:	Colour:	Utility:	Distance:	Depth:	Alignment:
No Services Encountered.						

Ground Conditions

From:	To:	Description:
0.00m	0.30m	TOPSOIL.
0.30m	0.70m	MADE GROUND: brown slightly sandy slightly gravelly silty clay with low cobble content and some red brick fragments.
0.70m	0.90m	Firm brown slightly sandy slightly gravelly silty CLAY with low cobble content.
0.90m	2.10m	Firm grey brown slightly sandy slightly gravelly silty clay with high cobble and low boulder content.

Photographs







SITE INVESTIGATIONS LTD

Project:	Dundrum Central Development
Client:	Land Development Agency
Consultant:	Barrett Mahony

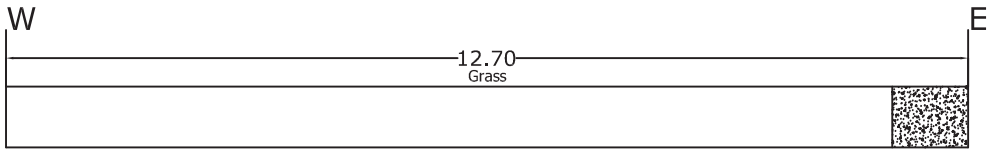
Logged by:	Excavation Started:	Excavation Finished:	CONTRACT NUMBER
M. Kaliski	18/08/2021	18/08/2021	5811

Scale: NOT TO SCALE, ALL DISTANCES IN m

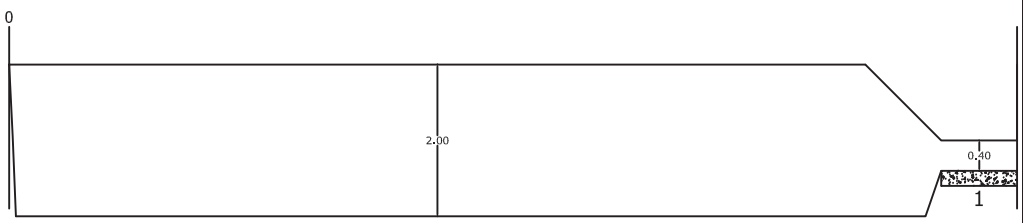
DEPTH ARE TO THE TOP OF SERVICES

ST03

Plan



Cross Section



Point:	Easting:	Northing:	Level:
Start (0)	717270.538	729000.305	44.46
End	717279.130	729007.121	43.24

Length:	Width:	Depth:
12.70m	0.80m	2.00m

Services

No:	Diameter:	Colour:	Utility:	Distance:	Depth:	Alignment:
1	-	Concrete	Unknown	11.70-12.70m	0.40m	90°

Ground Conditions

From:	To:	Description:
0.00m	0.10m	TOPSOIL.
0.10m	0.40m	MADE GROUND: grey brown slightly sandy slightly gravelly silty clay with low cobble content and some red brick fragments.
0.40m	0.80m	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content.
0.80m	2.00m	Firm brown grey slightly sandy slightly gravelly silty CLAY with high cobble content.

Photographs







SITE INVESTIGATIONS LTD

Project:	Dundrum Central Development
Client:	Land Development Agency
Consultant:	Barrett Mahony

Logged by:	Excavation Started:	Excavation Finished:	CONTRACT NUMBER
M. Kaliski	18/08/2021	18/08/2021	5811

Scale: NOT TO SCALE, ALL DISTANCES IN m

DEPTH ARE TO THE TOP OF SERVICES

Appendix 6

Geotechnical Laboratory Test Results

Classification Tests in accordance with BS1377: Part 4

Client	Land Development Agency
Site	Dundrum Central Development
S.I. File No	5811 / 21
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email info@siteinvestigations.ie
Report Date	6th October 2021

Hole ID	Depth	Sample No	Lab Ref No.	Sample Type	Natural Moisture Content %	Liquid Limit %	Plastic Limit %	Plastic Index %	Min. Dry Density Mg/m^3	Particle Density Mg/m^3	% passing 425um	Comments	**Remarks** **C**=Clay; **M**=Silt **Plasticity**: **L**=Low; **I**=Intermediate; **H**=High; **V**=Very High; **E**=Extremely High
TP03	1.50	MK08	21/1049	B	21.4	35	20	15			64.0		CL/CI
TP07	1.50	MK22	21/1052	B	10.5	33	19	14			38.5		CL
TP08	1.50	MK25	21/1053	B	11.0	35	20	15			55.3		CL/CI
TP11	1.20	MK34	21/1054	B	16.4	32	18	14			83.9		CL
TP15	0.70	MK45	21/1056	B	16.6								
TP16	1.30	MK49	21/1057	B	17.6	37	21	16			51.3		CI
TP16	2.50	MK50	21/1058	B	9.5								
TP18	1.50	MK56	21/1059	B	13.5	34	19	15			53.6		CL
TP19	1.50	MK59	21/1060	B	6.8								
TP20	1.50	MK62	21/1061	B	9.8	32	18	14			52.4		CL
TP22	1.50	MK65	21/1062	B	9.2	33	19	14			51.4		CL
TP23	1.50	MK68	21/1063	B	13.2								
TP24	1.50	MK71	21/1064	B	22.3	36	20	16			49.7		CI
TP25	1.50	MK74	21/1065	B	14.1								
TP25	2.50	MK75	21/1066	B	10.9								
TP26	1.50	MK78	21/1067	B	15.5	32	18	14			42.4		CL
TP27	1.50	MK81	21/1068	B	16.7								
TP28	1.50	MK84	21/1069	B	13.1	37	21	16			61.1		CI
TP29	1.50	MK87	21/1070	B	12.8								
TP30	0.60	MK89	21/1071	B	20.3								
TP31	0.80	MK92	21/1072	B	31.1								
TP31	1.90	MK94	21/1073	B	15.1								
TP32	0.80	MK96	21/1074	B	25.3								
TP32	2.50	MK98	21/1075	B	12.2								
TP33	1.50	MK101	21/1076	B	16.1	37	23	14			55.5		CL
TP34	0.80	MK104	21/1077	B	13.5								

_____Paddy McGonagle
Site Investigations Ltd

Classification Tests in accordance with BS1377: Part 4

Client	Land Development Agency
Site	Dundrum Central Development
S.I. File No	5811 / 21
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email info@siteinvestigations.ie
Report Date	6th October 2021

Hole ID	Depth	Sample No	Lab Ref No.	Sample Type	Natural Moisture Content %	Liquid Limit %	Plastic Limit %	Plastic Index %	Min. Dry Density Mg/m^3	Particle Density Mg/m^3	% passing 425um	Comments	**Remarks** **C**=Clay; **M**=Silt **Plasticity**: **L**=Low; **I**=Intermediate; **H**=High; **V**=Very High; **E**=Extremely High
TP34	2.20	MK105	21/1078	B	13.8								
TP35	1.00	MK108	21/1079	B	11.9								
TP35	2.50	MK109	21/1080	B	10.5								
BH01	3.00	CMH003	21/1081	B	15.4								
BH02	2.00	CMH043	21/1082	B	25.0								
BH02	3.00	CMH044	21/1083	B	8.7								
BH03	4.00	CMH096	21/1084	B	10.6								
BH04	3.00	CMH073	21/1085	B	12.7								
BH05	1.00	CMH008	21/1086	B	18.1								
BH05	2.00	CMH009	21/1087	B	15.0								
BH05	4.00	CMH011	21/1088	B	10.2								
BH06	1.00	CMH035	21/1089	B	19.3								
BH06	2.00	CMH036	21/1090	B	9.5								
BH06	3.00	CMH037	21/1091	B	11.6								
BH06	4.00	CMH019	21/1092	B	8.8								
BH08	1.00	CMH087	21/1093	B	24.3								
BH08	3.00	CMH089	21/1094	B	11.6								
BH09	1.00	CMH076	21/1095	B	18.6								
BH09	3.00	CMH078	21/1096	B	10.3								
BH10	1.00	CMH081	21/1097	B	12.5								
BH10	2.00	CMH082	21/1098	B	10.4								
BH11	1.00	CMH063	21/1099	B	12.4								
BH11	2.00	CMH064	21/1100	B	13.0								
BH11	3.00	CMH065	21/1101	B	16.7								
BH12	1.00	CMH012	21/1102	B	34.9								
BH12	3.00	CMH014	21/1103	B	6.9								

_____Paddy McGonagle
Site Investigations Ltd

Classification Tests in accordance with BS1377: Part 4

Client	Land Development Agency
Site	Dundrum Central Development
S.I. File No	5811 / 21
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email info@siteinvestigations.ie
Report Date	6th October 2021

Hole ID	Depth	Sample No	Lab Ref No.	Sample Type	Natural Moisture Content %	Liquid Limit %	Plastic Limit %	Plastic Index %	Min. Dry Density Mg/m^3	Particle Density Mg/m^3	% passing 425um	Comments	**Remarks** **C**=Clay; **M**=Silt **Plasticity**: **L**=Low; **I**=Intermediate; **H**=High; **V**=Very High; **E**=Extremely High
BH13	1.00	CMH028	21/1104	B	15.7								
BH13	3.00	CMH030	21/1105	B	12.4								
BH14	1.00	CMH021	21/1106	B	16.3								
BH14	2.00	CMH022	21/1107	B	9.1								
BH15	1.00	CMH049	21/1108	B	11.5								
BH15	2.00	CMH050	21/1109	B	17.6								

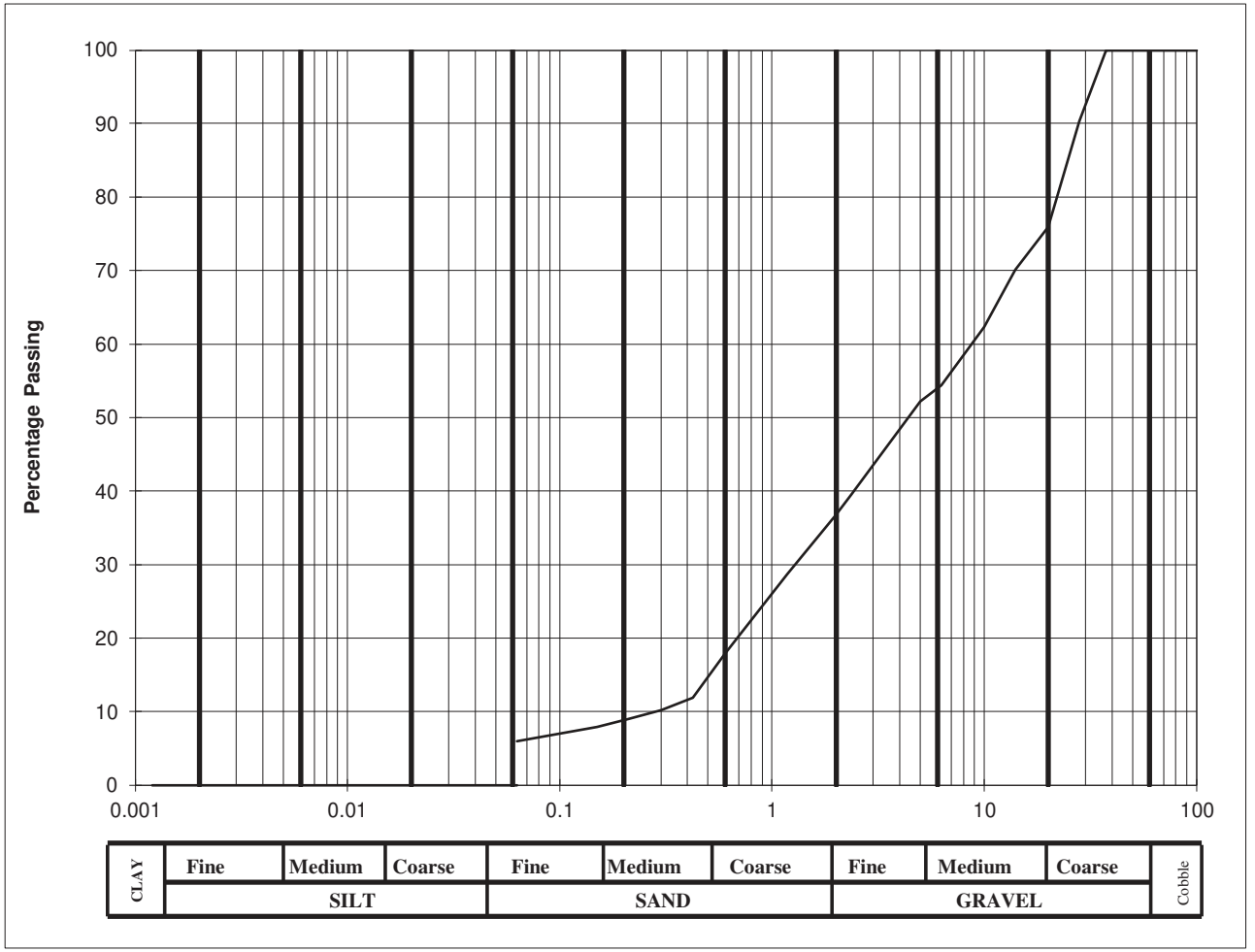
_____Paddy McGonagle
Site Investigations Ltd

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	90.3		
20	75.9		
14	70.1		
10	62.3		
6.3	54.4		
5.0	52.2		
2.36	39.5		
2.00	36.7		
1.18	28.7		
0.600	17.8		
0.425	11.9		
0.300	10.2		
0.212	9		
0.150	7.9		
0.063	6		

Cobbles, %	0
Gravel, %	63
Sand, %	31
Clay / Silt, %	6



Client :	Land Development Agency
Project :	Dundrum Central Development

Lab. No :	21/1048
Sample No :	MK03

Hole ID :	TP 01
Depth, m :	1.50

Material description :	silty very sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

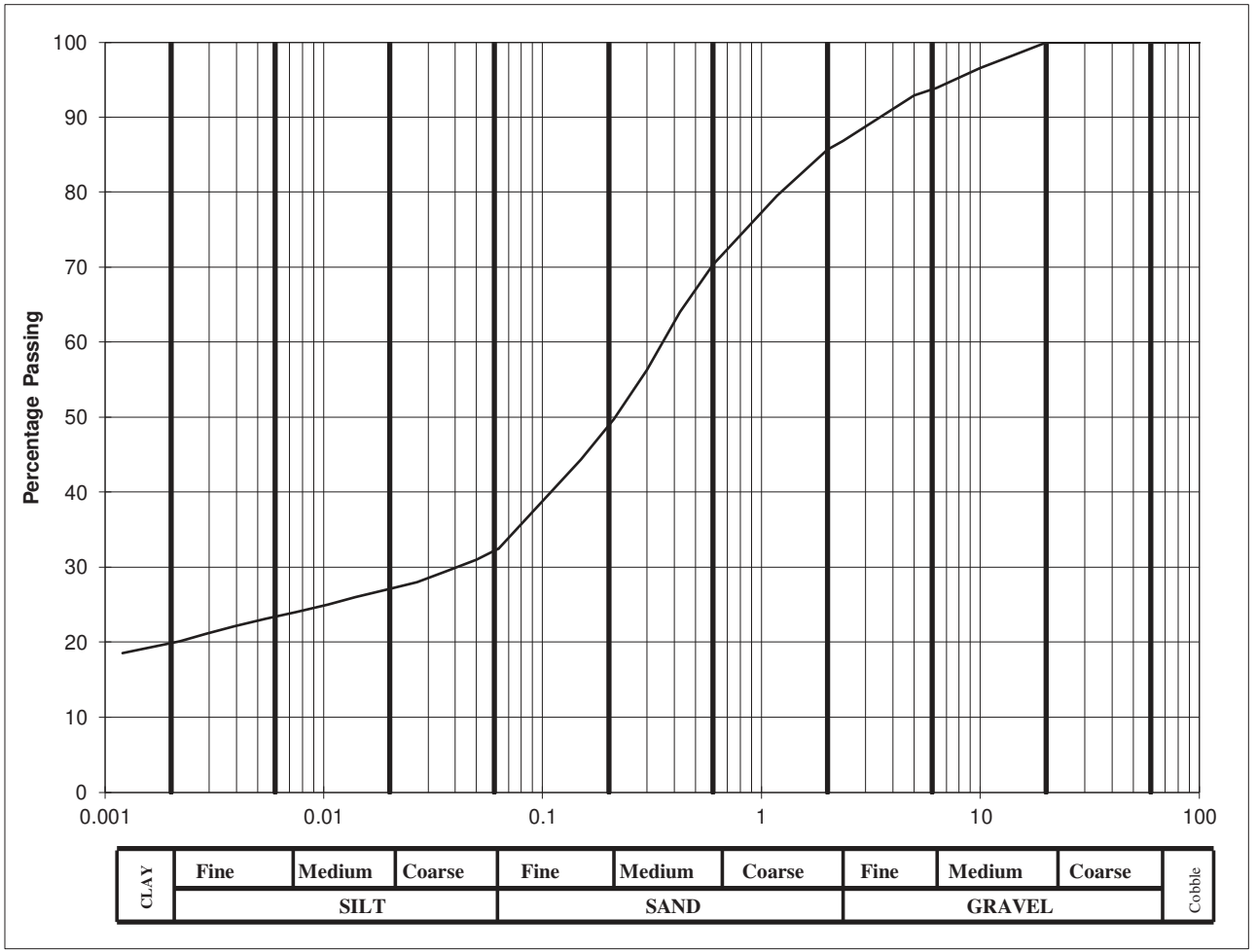
Printed 08/11/2021

_____Paddy McGonagle
Site Investigations Ltd

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	33
90	100	**0.0200**	27
75	100	**0.0060**	23
63	100	**0.0020**	20
50	100		
37.5	100		
28	100		
20	100		
14	98.2		
10	96.5		
6.3	93.9		
5.0	92.9		
2.36	86.8		
2.00	85.7		
1.18	79.5		
0.600	70.3		
0.425	64		
0.300	56.3		
0.212	49.7		
0.150	44.3		
0.063	33		



Cobbles, %	0
Gravel, %	14
Sand, %	53
Silt, %	13
Clay, %	20

Client :	Land Development Agency
Project :	Dundrum Central Development

Lab. No :	21/1049
Sample No :	MK08

Hole ID :	TP 03
Depth, m :	1.50

Material description :	sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

Printed 08/11/2021

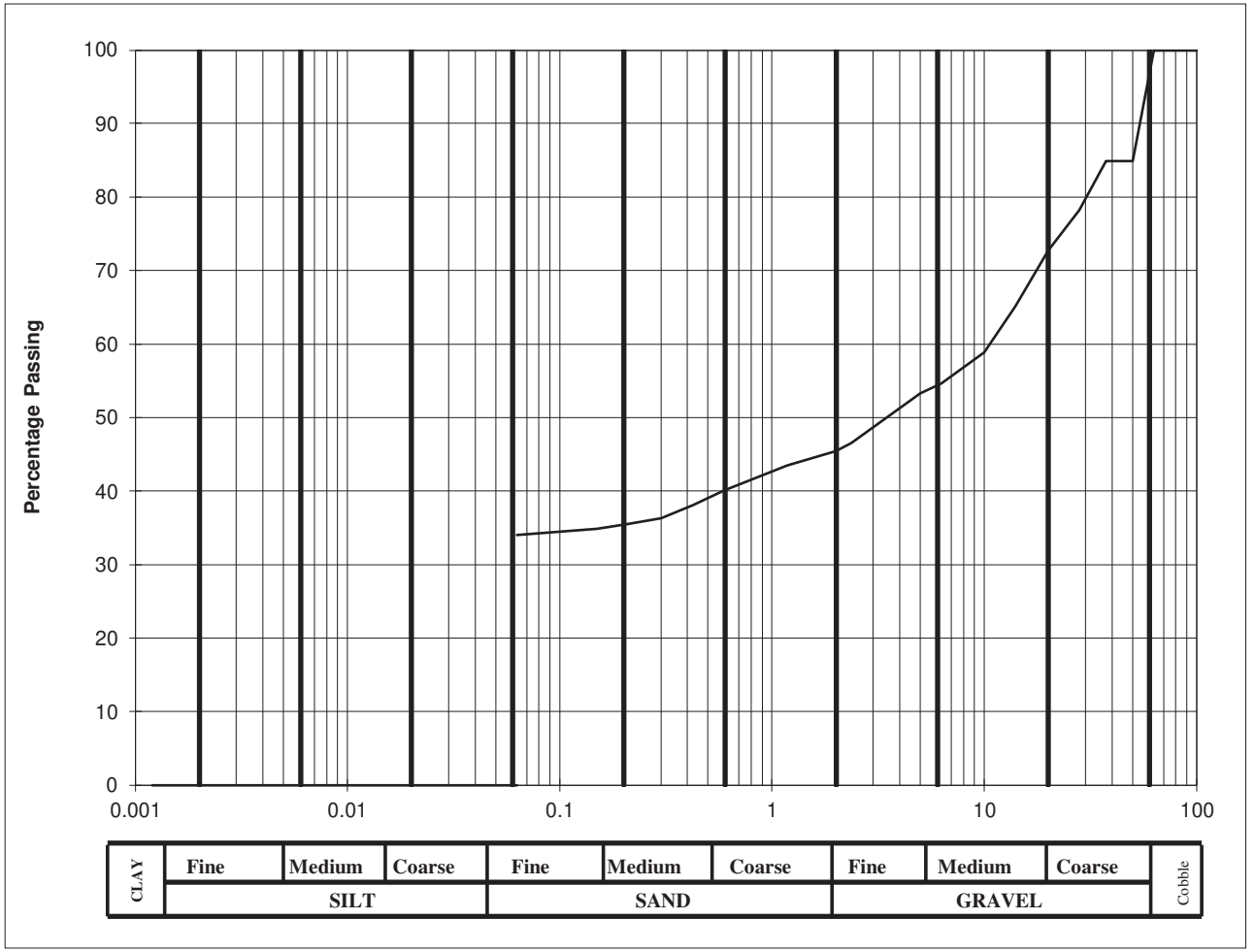
_____Paddy McGonagle
Site Investigations Ltd

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	84.9		
37.5	84.9		
28	78.2		
20	72.7		
14	65.1		
10	58.9		
6.3	54.6		
5.0	53.3		
2.36	46.5		
2.00	45.4		
1.18	43.5		
0.600	40.1		
0.425	38.1		
0.300	36.3		
0.212	35.5		
0.150	34.9		
0.063	34		

Cobbles, %	0
Gravel, %	55
Sand, %	11
Clay / Silt, %	34



Client :	Land Development Agency	Lab. No :	21/1050	Hole ID :	TP 04
Project :	Dundrum Central Development	Sample No :	MK10	Depth, m :	1.00

Material description :	very silty sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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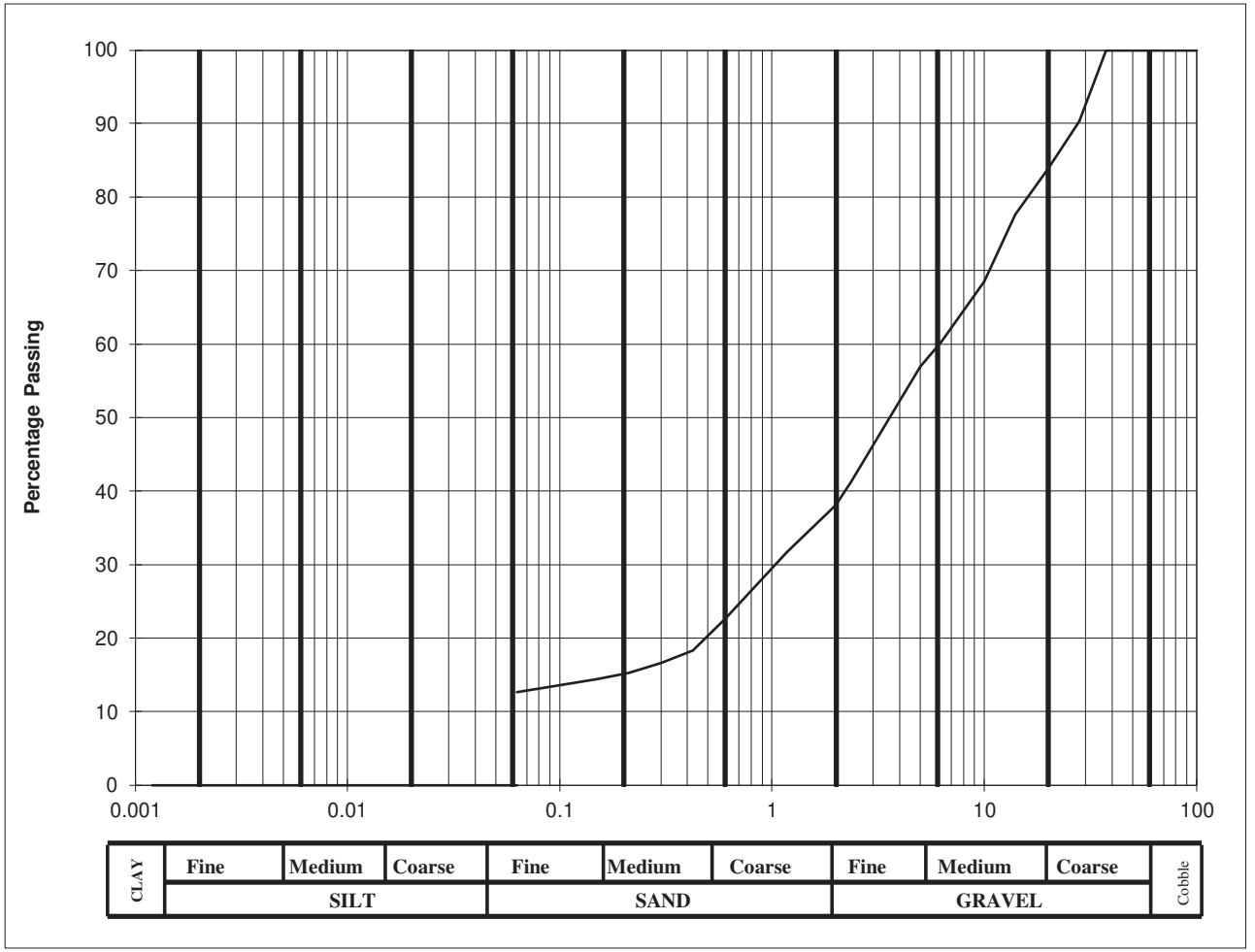
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BS 1377 Particle Size Analysis

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BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	90.3		
20	83.9		
14	77.6		
10	68.5		
6.3	60.3		
5.0	56.9		
2.36	41.3		
2.00	38.1		
1.18	31.7		
0.600	22.5		
0.425	18.3		
0.300	16.6		
0.212	15.3		
0.150	14.4		
0.063	13		

Cobbles, %	0
Gravel, %	62
Sand, %	25
Clay / Silt, %	13



Client :	Land Development Agency	Lab. No :	21/1051	Hole ID :	TP 06
Project :	Dundrum Central Development	Sample No :	MK19	Depth, m :	1.00

Material description :	silty very sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

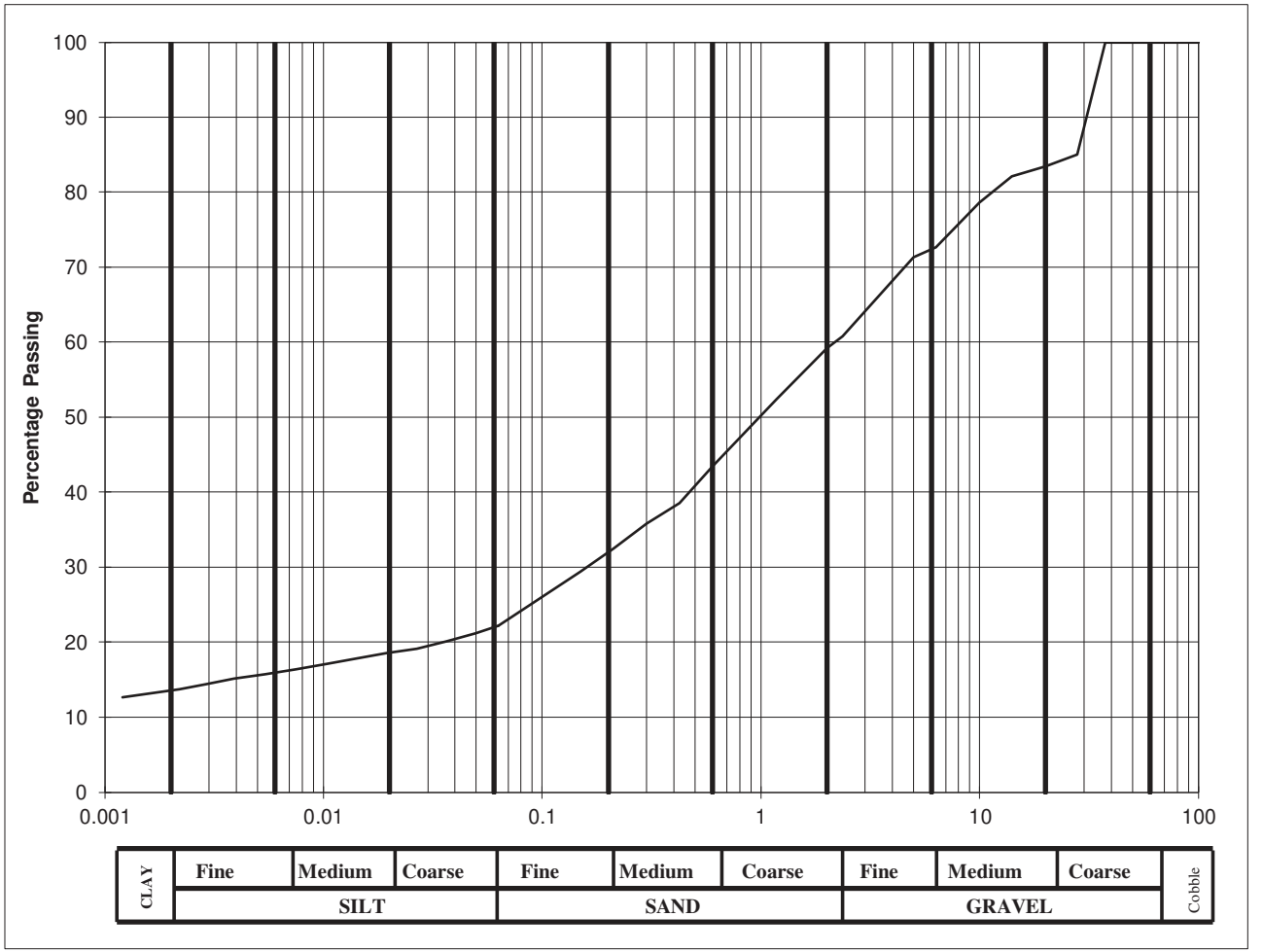
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BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	22
90	100	**0.0200**	18
75	100	**0.0060**	16
63	100	**0.0020**	14
50	100		
37.5	100		
28	85		
20	83.4		
14	82.1		
10	78.6		
6.3	72.6		
5.0	71.3		
2.36	60.8		
2.00	59.2		
1.18	52.4		
0.600	43.4		
0.425	38.5		
0.300	35.8		
0.212	32.5		
0.150	29.4		
0.063	22		



Cobbles, %	0
Gravel, %	41
Sand, %	37
Silt, %	8
Clay, %	14

Client :	Land Development Agency
Project :	Dundrum Central Development

Lab. No :	21/1052
Sample No :	MK22

Hole ID :	TP 07
Depth, m :	1.50

Material description :	sandy gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

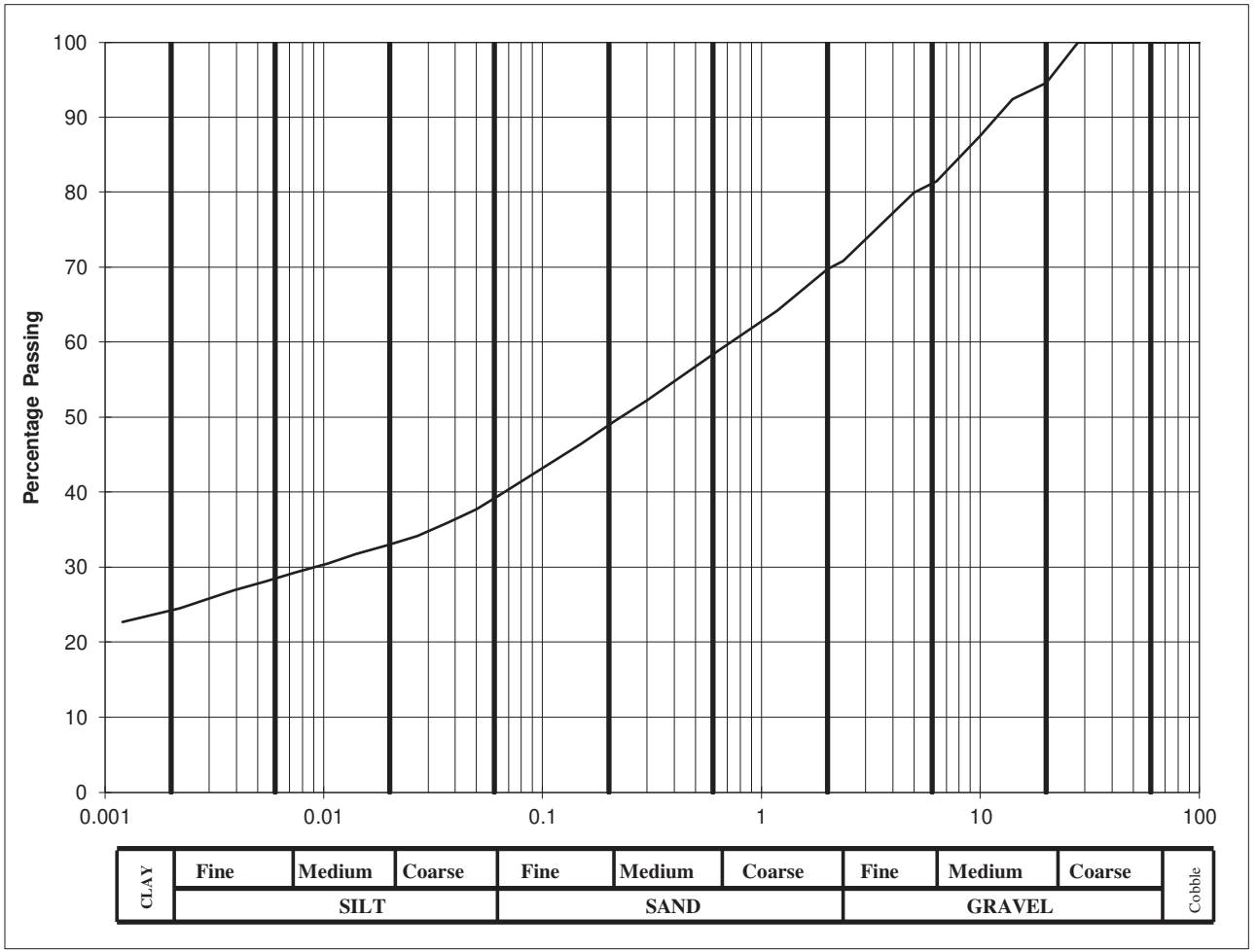
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BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	40
90	100	**0.0200**	33
75	100	**0.0060**	28
63	100	**0.0020**	24
50	100		
37.5	100		
28	100		
20	94.5		
14	92.4		
10	87.5		
6.3	81.4		
5.0	79.9		
2.36	70.8		
2.00	69.7		
1.18	64.2		
0.600	58.4		
0.425	55.3		
0.300	52.2		
0.212	49.4		
0.150	46.4		
0.063	40		



Cobbles, %	0
Gravel, %	30
Sand, %	30
Silt, %	16
Clay, %	24

Client :	Land Development Agency
Project :	Dundrum Central Development

Lab. No :	21/1053
Sample No :	MK25

Hole ID :	TP 08
Depth, m :	1.50

Material description :	slightly sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

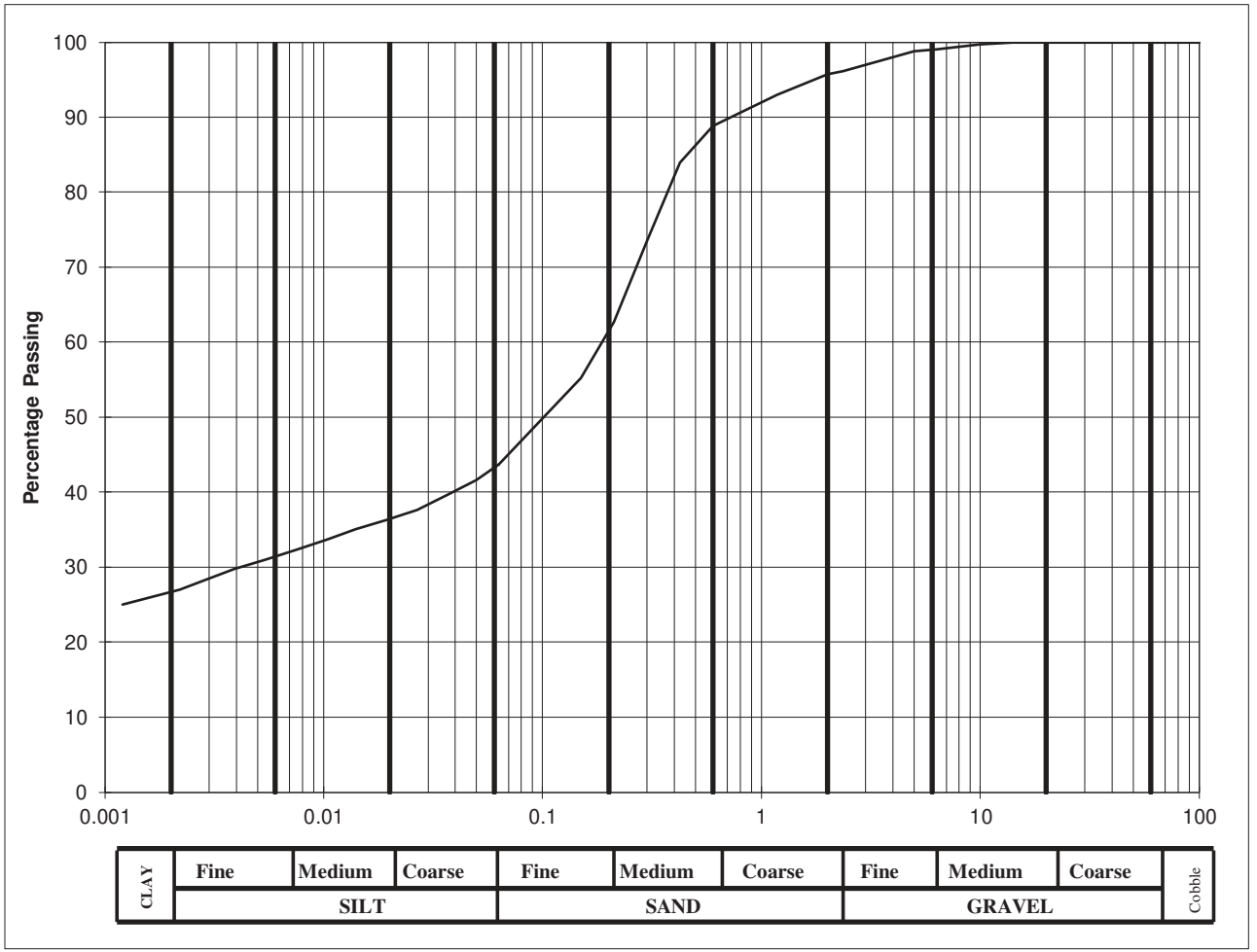
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BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	44
90	100	**0.0200**	36
75	100	**0.0060**	32
63	100	**0.0020**	27
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99.7		
6.3	99		
5.0	98.8		
2.36	96.1		
2.00	95.7		
1.18	93		
0.600	88.8		
0.425	83.9		
0.300	73.5		
0.212	62.7		
0.150	55.2		
0.063	44		



Cobbles, %	0
Gravel, %	4
Sand, %	52
Silt, %	17
Clay, %	27

Client :	Land Development Agency
Project :	Dundrum Central Development

Lab. No :	21/1054
Sample No :	MK34

Hole ID :	TP 11
Depth, m :	1.20

Material description :	sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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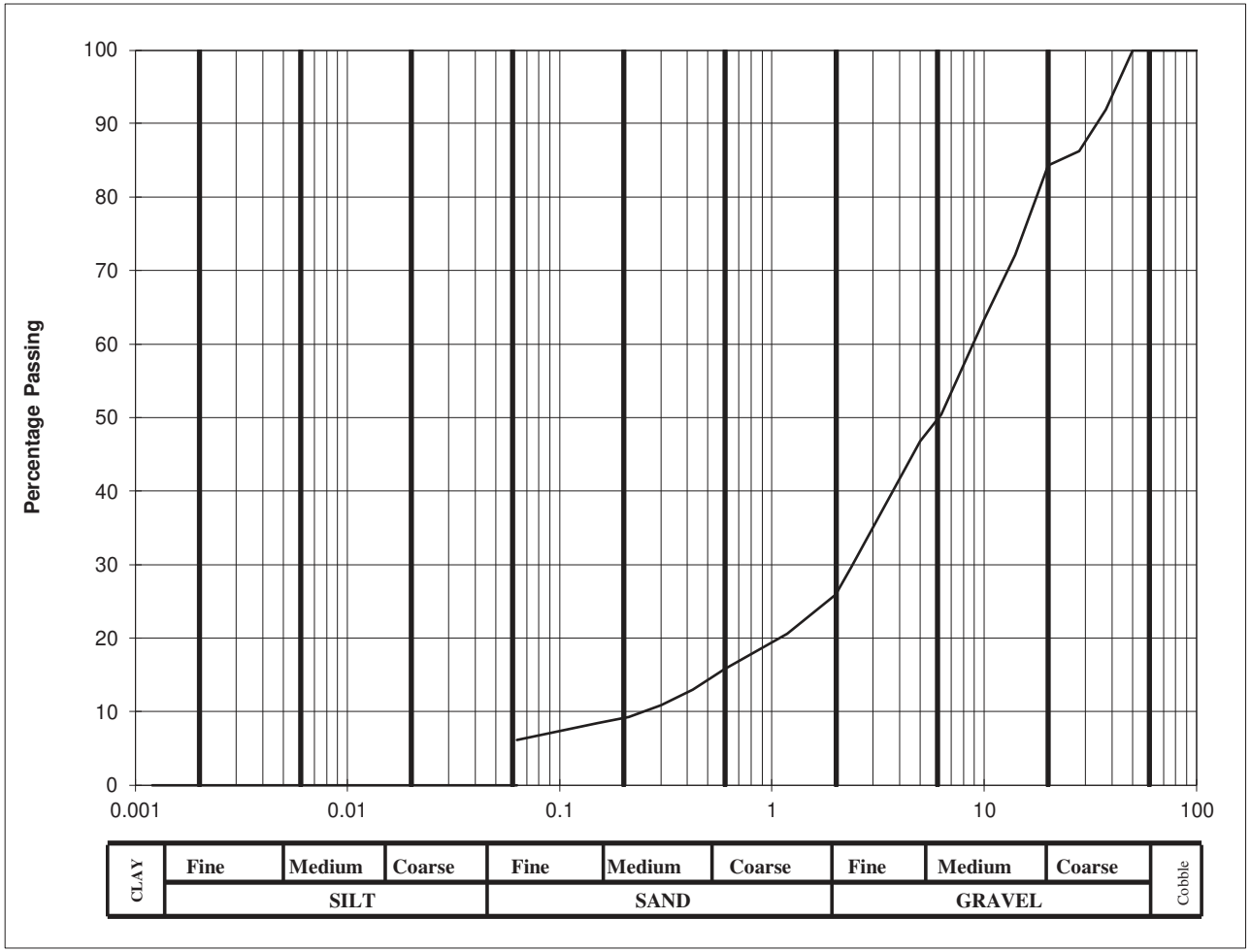
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BS 1377 Particle Size Analysis

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BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	91.9		
28	86.2		
20	84.3		
14	72.1		
10	63.3		
6.3	50.4		
5.0	46.8		
2.36	29.6		
2.00	25.9		
1.18	20.6		
0.600	15.8		
0.425	13		
0.300	10.9		
0.212	9.3		
0.150	8.4		
0.063	6		

Cobbles, %	0
Gravel, %	74
Sand, %	20
Clay / Silt, %	6



Client :	Land Development Agency
Project :	Dundrum Central Development

Lab. No :	21/1055
Sample No :	MK43

Hole ID :	TP 14
Depth, m :	1.50

Material description :	silty very sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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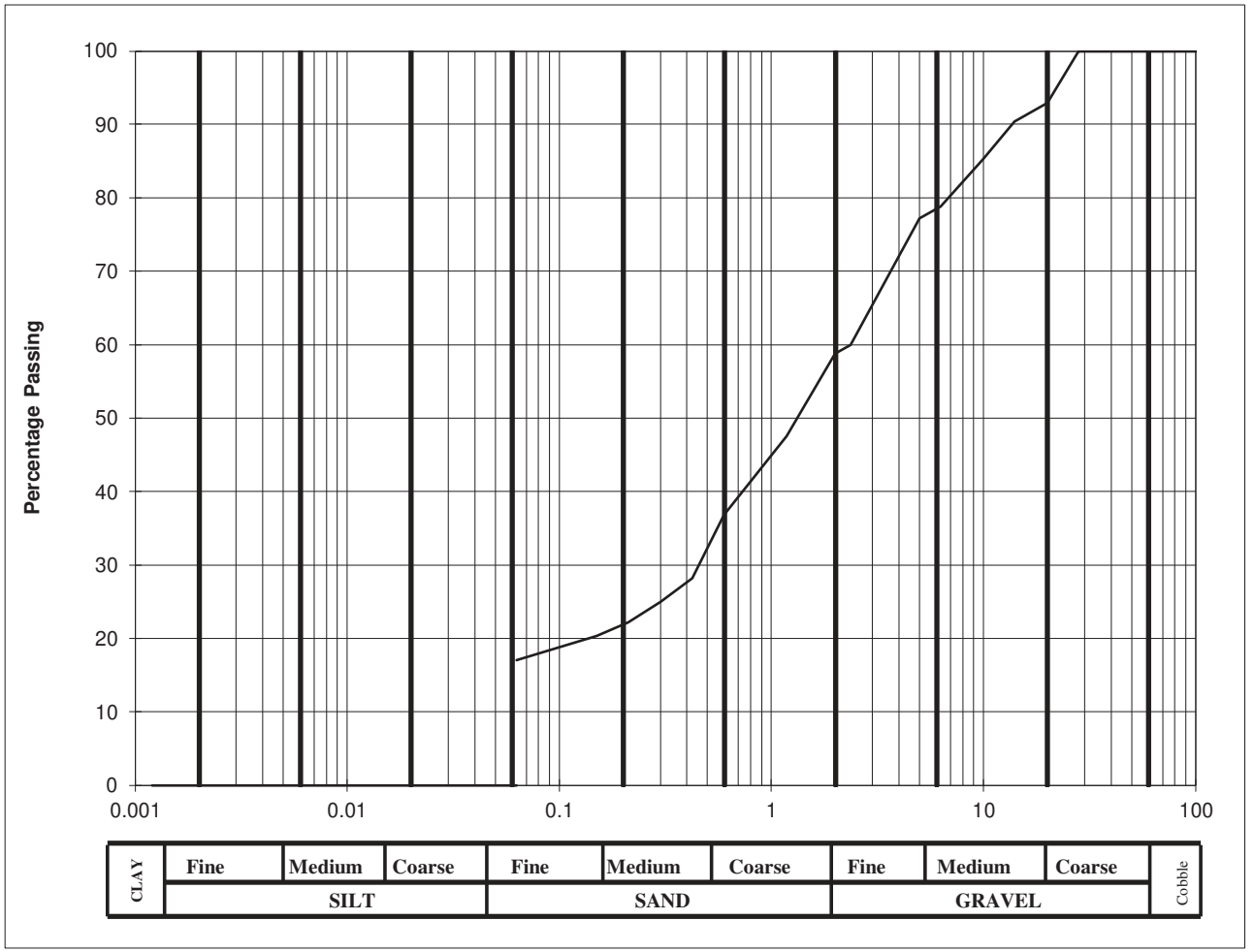
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BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	100		
20	92.9		
14	90.4		
10	85.3		
6.3	78.8		
5.0	77.2		
2.36	60		
2.00	58.8		
1.18	47.5		
0.600	36.8		
0.425	28.2		
0.300	25		
0.212	22.2		
0.150	20.3		
0.063	17		

Cobbles, %	0
Gravel, %	41
Sand, %	42
Clay / Silt, %	17



Client :	Land Development Agency
Project :	Dundrum Central Development

Lab. No :	21/1056
Sample No :	MK45

Hole ID :	TP 15
Depth, m :	0.70

Material description :	silty very sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

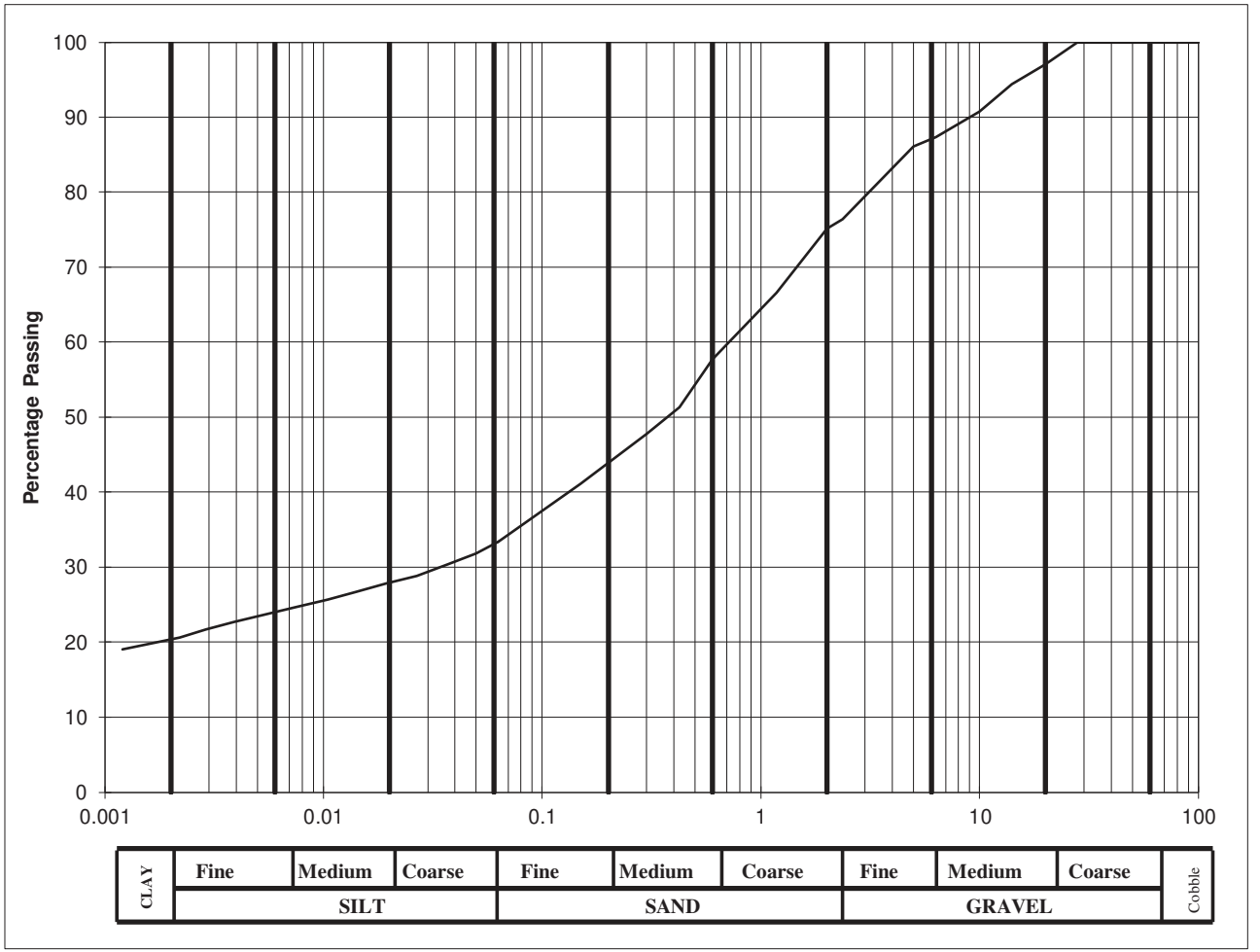
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BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	33
90	100	**0.0200**	28
75	100	**0.0060**	24
63	100	**0.0020**	21
50	100		
37.5	100		
28	100		
20	97		
14	94.4		
10	90.7		
6.3	87.3		
5.0	86.1		
2.36	76.4		
2.00	75.1		
1.18	66.6		
0.600	57.7		
0.425	51.3		
0.300	47.7		
0.212	44.4		
0.150	41.1		
0.063	33		



Cobbles, %	0
Gravel, %	25
Sand, %	42
Silt, %	12
Clay, %	21

Client :	Land Development Agency
Project :	Dundrum Central Development

Lab. No :	21/1057
Sample No :	MK49

Hole ID :	TP 16
Depth, m :	1.30

Material description :	sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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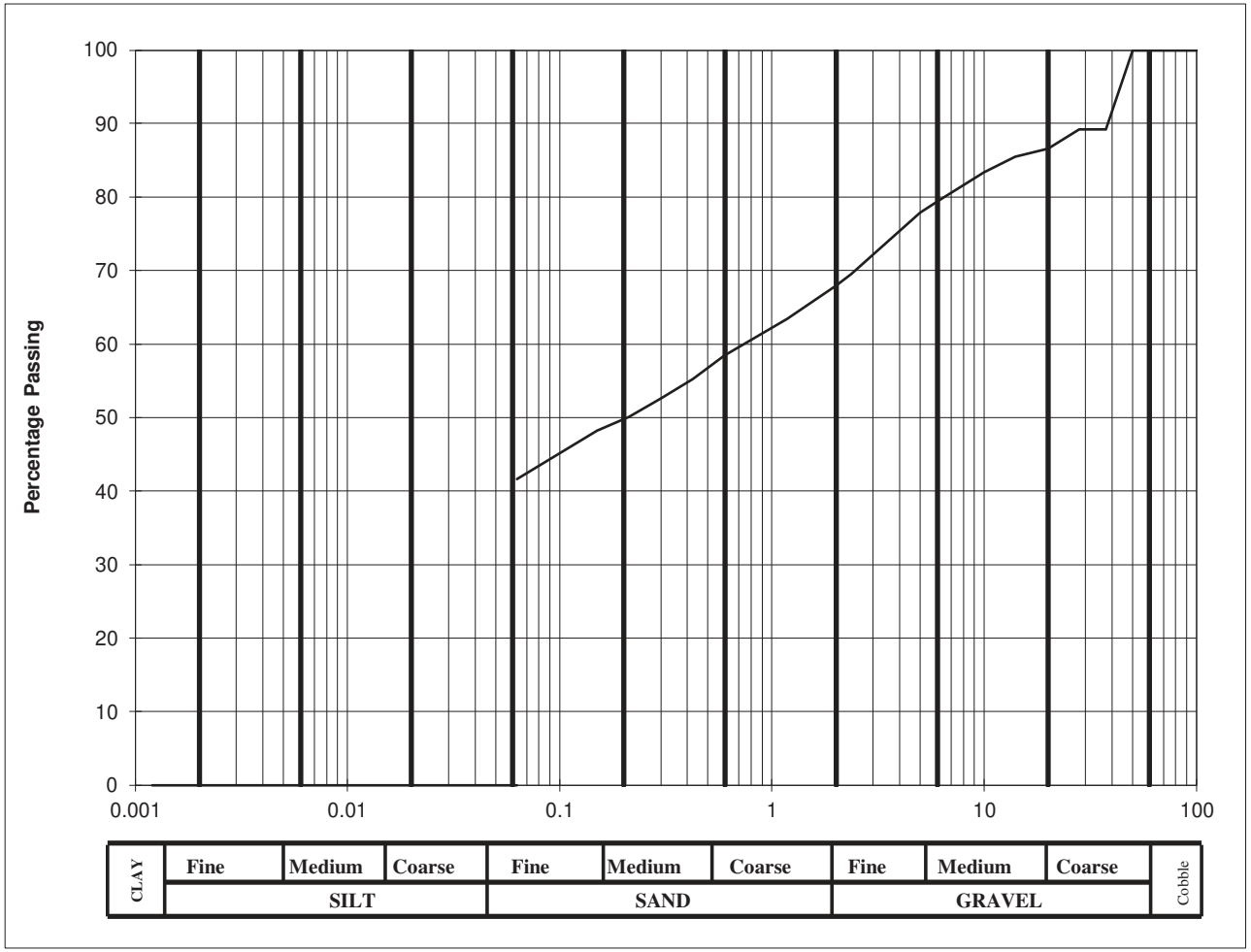
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BS 1377 Particle Size Analysis

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BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	89.2		
28	89.2		
20	86.6		
14	85.5		
10	83.4		
6.3	79.7		
5.0	77.9		
2.36	69.5		
2.00	67.9		
1.18	63.4		
0.600	58.4		
0.425	55.2		
0.300	52.6		
0.212	50.1		
0.150	48.2		
0.063	42		

Cobbles, %	0
Gravel, %	32
Sand, %	26
Clay / Silt, %	42



Client :	Land Development Agency	Lab. No :	21/1058	Hole ID :	TP 16
Project :	Dundrum Central Development	Sample No :	MK50	Depth, m :	2.50

Material description :	slightly sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

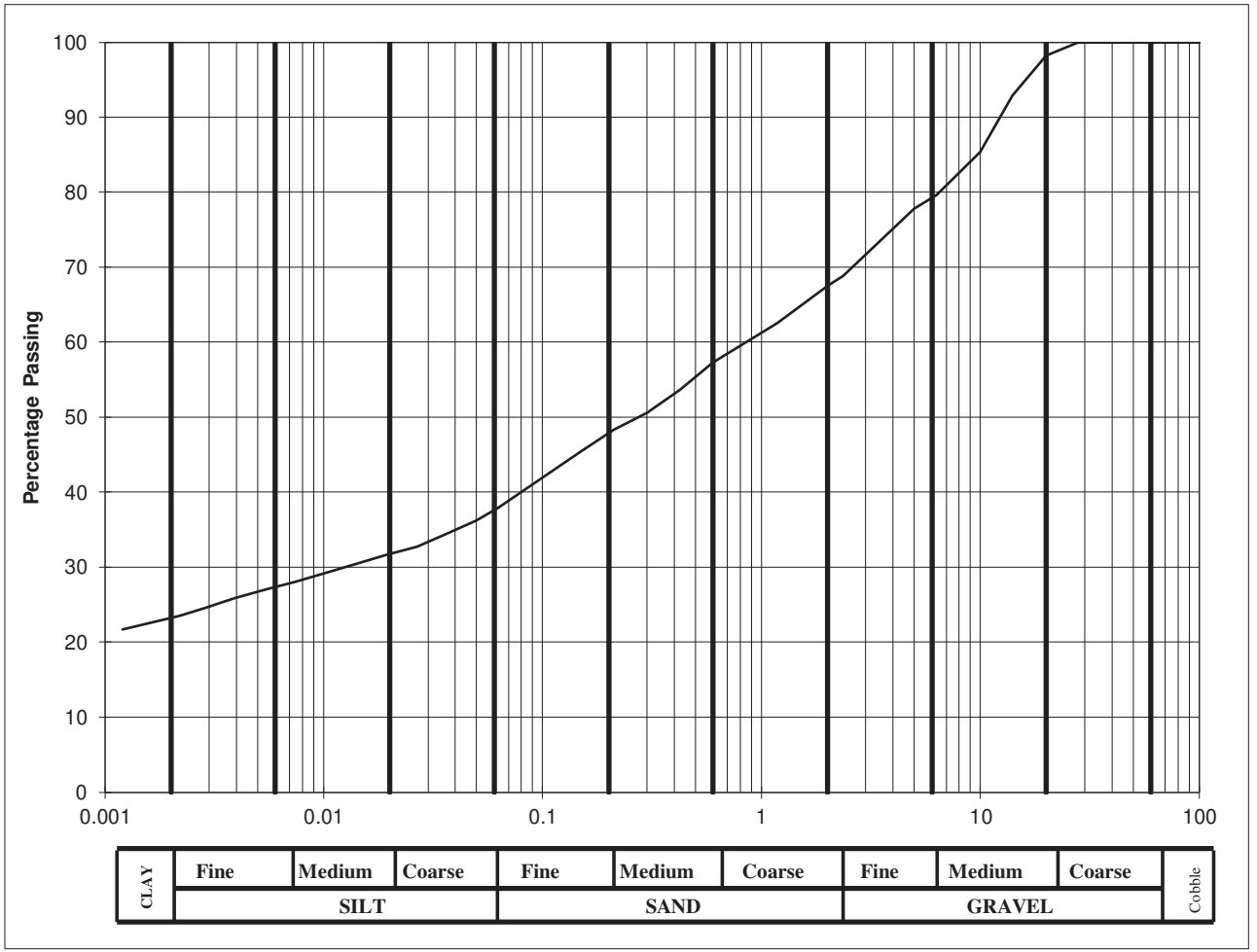
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BS 1377 Particle Size Analysis

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BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	38
90	100	**0.0200**	32
75	100	**0.0060**	27
63	100	**0.0020**	23
50	100		
37.5	100		
28	100		
20	98.2		
14	92.9		
10	85.3		
6.3	79.6		
5.0	77.8		
2.36	68.8		
2.00	67.5		
1.18	62.5		
0.600	57.3		
0.425	53.6		
0.300	50.6		
0.212	48.3		
0.150	45.4		
0.063	38		



Cobbles, %	0
Gravel, %	33
Sand, %	30
Silt, %	15
Clay, %	23

Client :	Land Development Agency
Project :	Dundrum Central Development

Lab. No :	21/1059
Sample No :	MK56

Hole ID :	TP 18
Depth, m :	1.50

Material description :	slightly sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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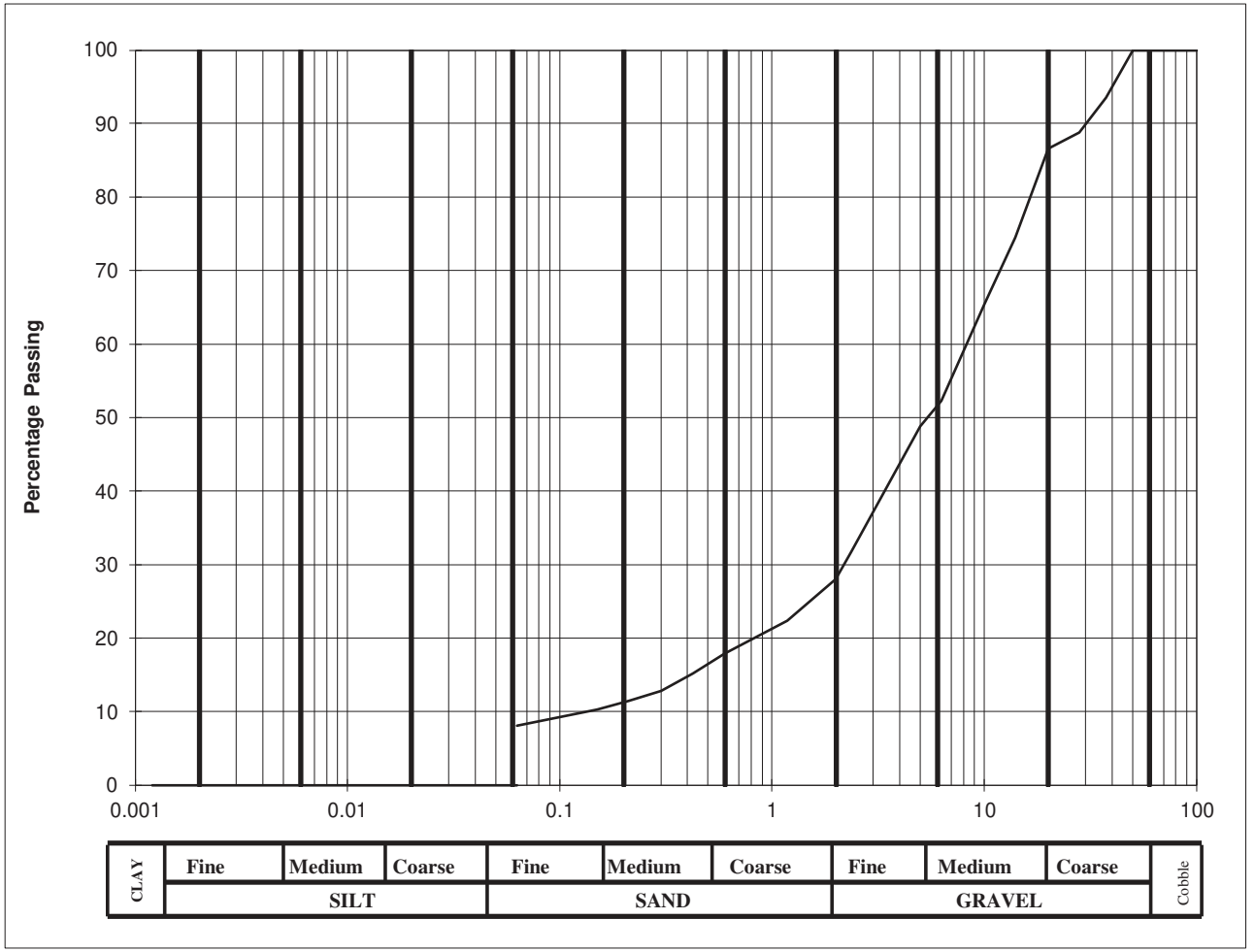
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BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	93.5		
28	88.8		
20	86.6		
14	74.5		
10	65.4		
6.3	52.3		
5.0	48.8		
2.36	31.7		
2.00	28		
1.18	22.4		
0.600	17.9		
0.425	15.2		
0.300	12.8		
0.212	11.5		
0.150	10.3		
0.063	8		

Cobbles, %	0
Gravel, %	72
Sand, %	20
Clay / Silt, %	8



Client :	Land Development Agency	Lab. No :	21/1060	Hole ID :	TP 19
Project :	Dundrum Central Development	Sample No :	MK59	Depth, m :	1.50

Material description :	silty very sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

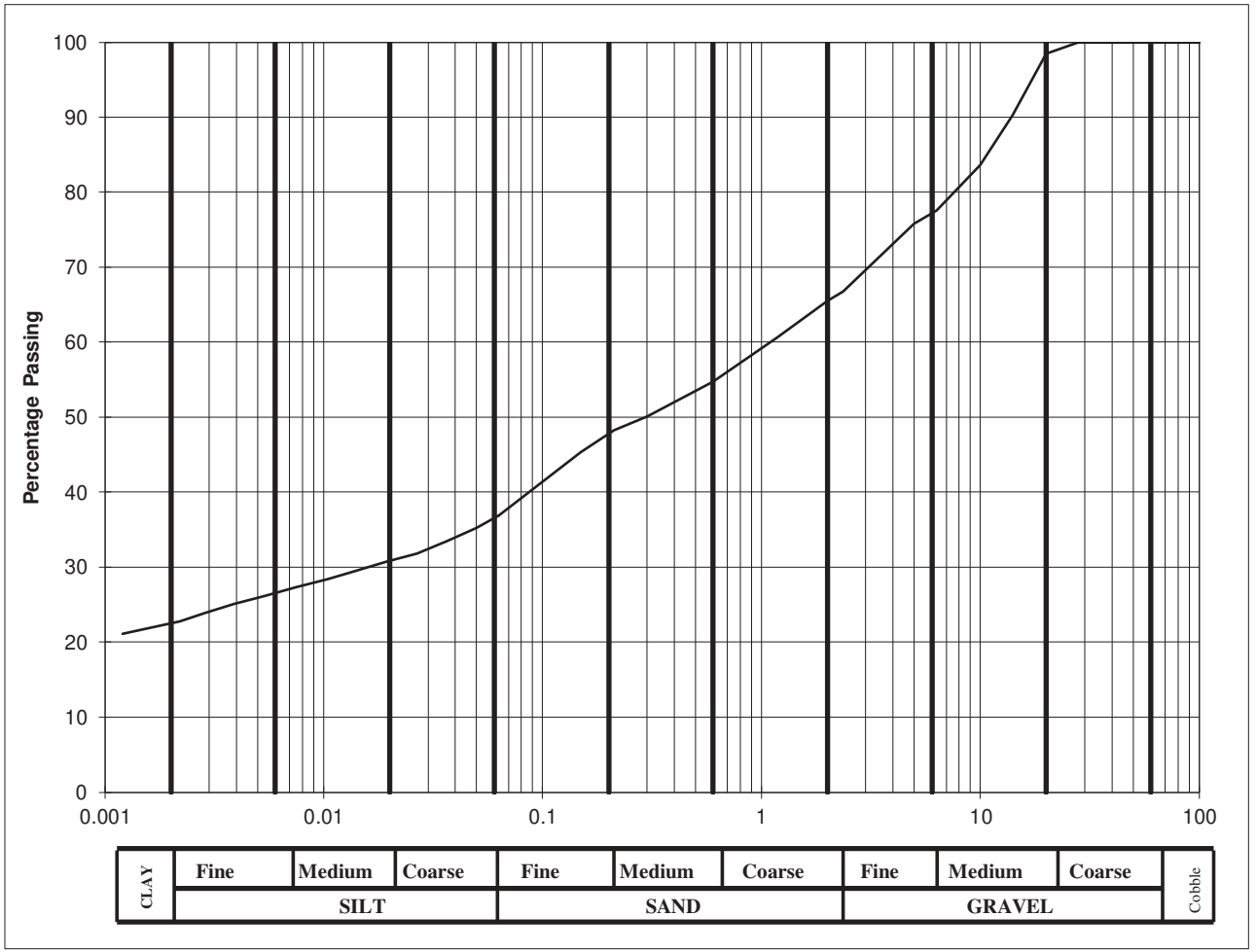
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BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	37
90	100	**0.0200**	31
75	100	**0.0060**	27
63	100	**0.0020**	23
50	100		
37.5	100		
28	100		
20	98.4		
14	90.2		
10	83.6		
6.3	77.5		
5.0	75.8		
2.36	66.7		
2.00	65.5		
1.18	60.6		
0.600	54.7		
0.425	52.4		
0.300	50.1		
0.212	48.2		
0.150	45.3		
0.063	37		



Cobbles, %	0
Gravel, %	35
Sand, %	29
Silt, %	14
Clay, %	23

Client :	Land Development Agency
Project :	Dundrum Central Development

Lab. No :	21/1061
Sample No :	MK62

Hole ID :	TP 20
Depth, m :	1.50

Material description :	slightly sandy gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

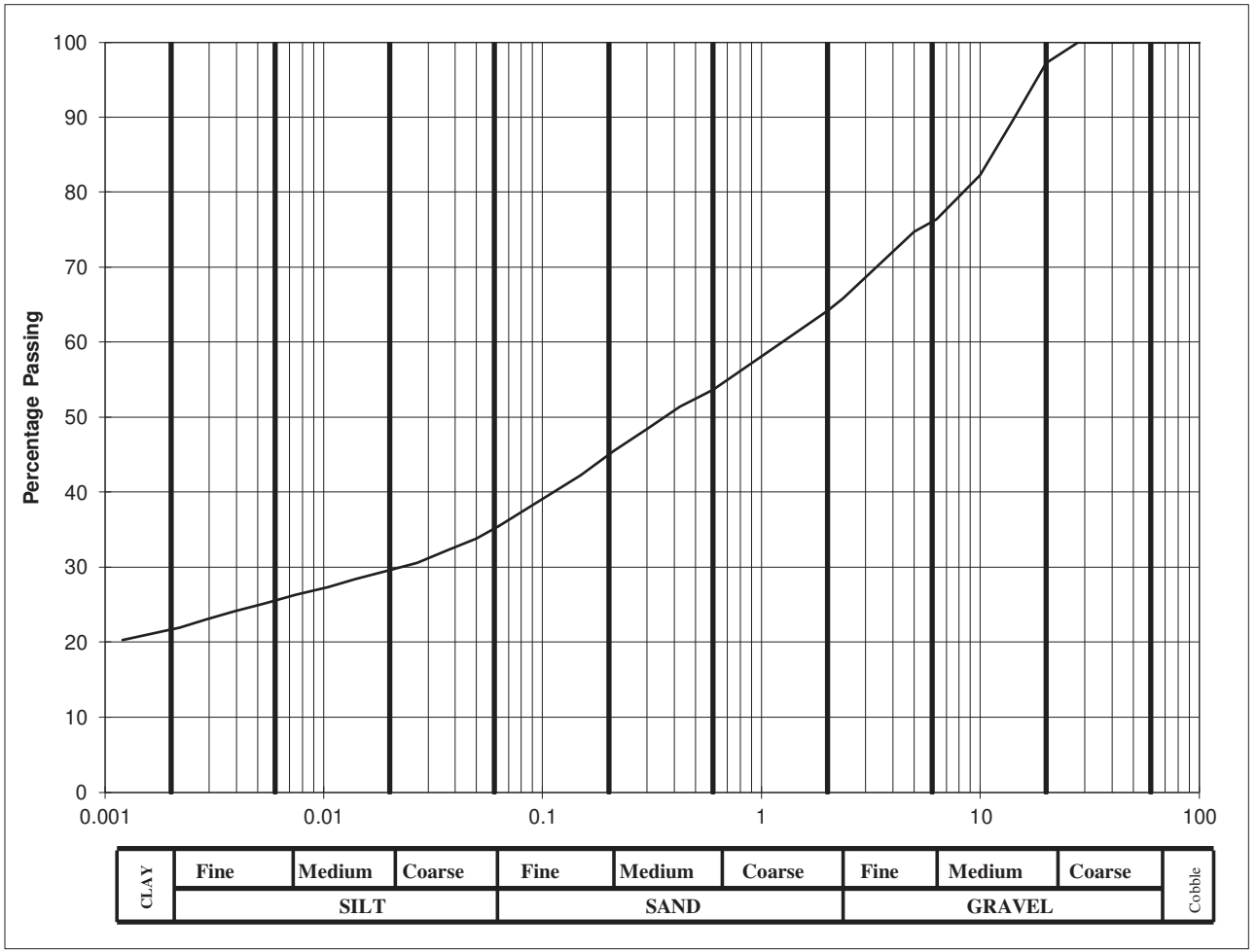
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BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	36
90	100	**0.0200**	29
75	100	**0.0060**	26
63	100	**0.0020**	22
50	100		
37.5	100		
28	100		
20	97.2		
14	89.5		
10	82.3		
6.3	76.4		
5.0	74.7		
2.36	65.8		
2.00	64.2		
1.18	59.5		
0.600	53.6		
0.425	51.4		
0.300	48.4		
0.212	45.5		
0.150	42.3		
0.063	36		



Cobbles, %	0
Gravel, %	36
Sand, %	28
Silt, %	14
Clay, %	22

Client :	Land Development Agency
Project :	Dundrum Central Development

Lab. No :	21/1062
Sample No :	MK65

Hole ID :	TP 22
Depth, m :	1.50

Material description :	slightly sandy gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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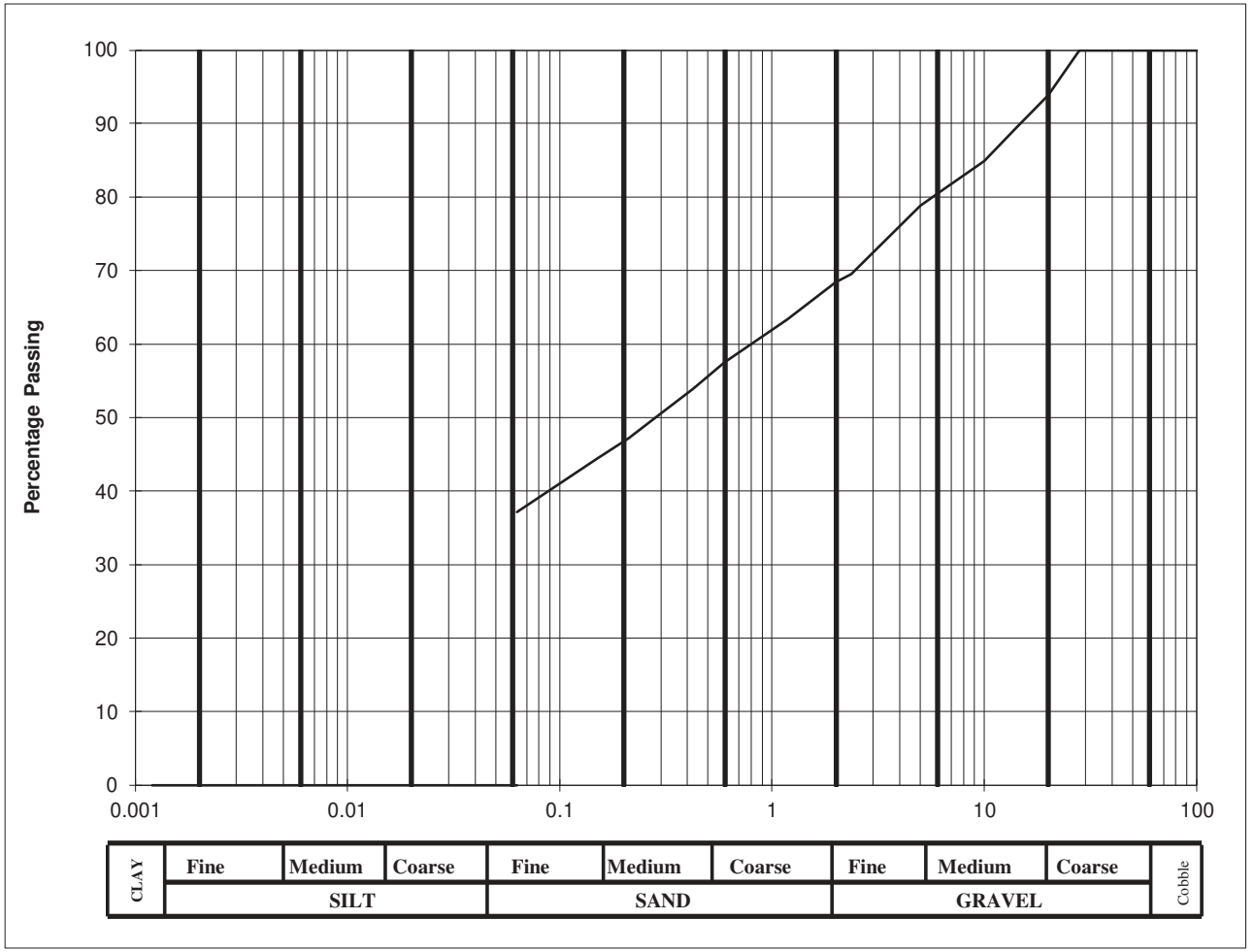
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BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	100		
20	93.8		
14	89.3		
10	84.9		
6.3	80.8		
5.0	78.8		
2.36	69.5		
2.00	68.4		
1.18	63.3		
0.600	57.5		
0.425	53.9		
0.300	50.6		
0.212	47.2		
0.150	44.4		
0.063	37		

Cobbles, %	0
Gravel, %	32
Sand, %	31
Clay / Silt, %	37



Client :	Land Development Agency
Project :	Dundrum Central Development

Lab. No :	21/1063
Sample No :	MK68

Hole ID :	TP 23
Depth, m :	1.50

Material description :	slightly sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

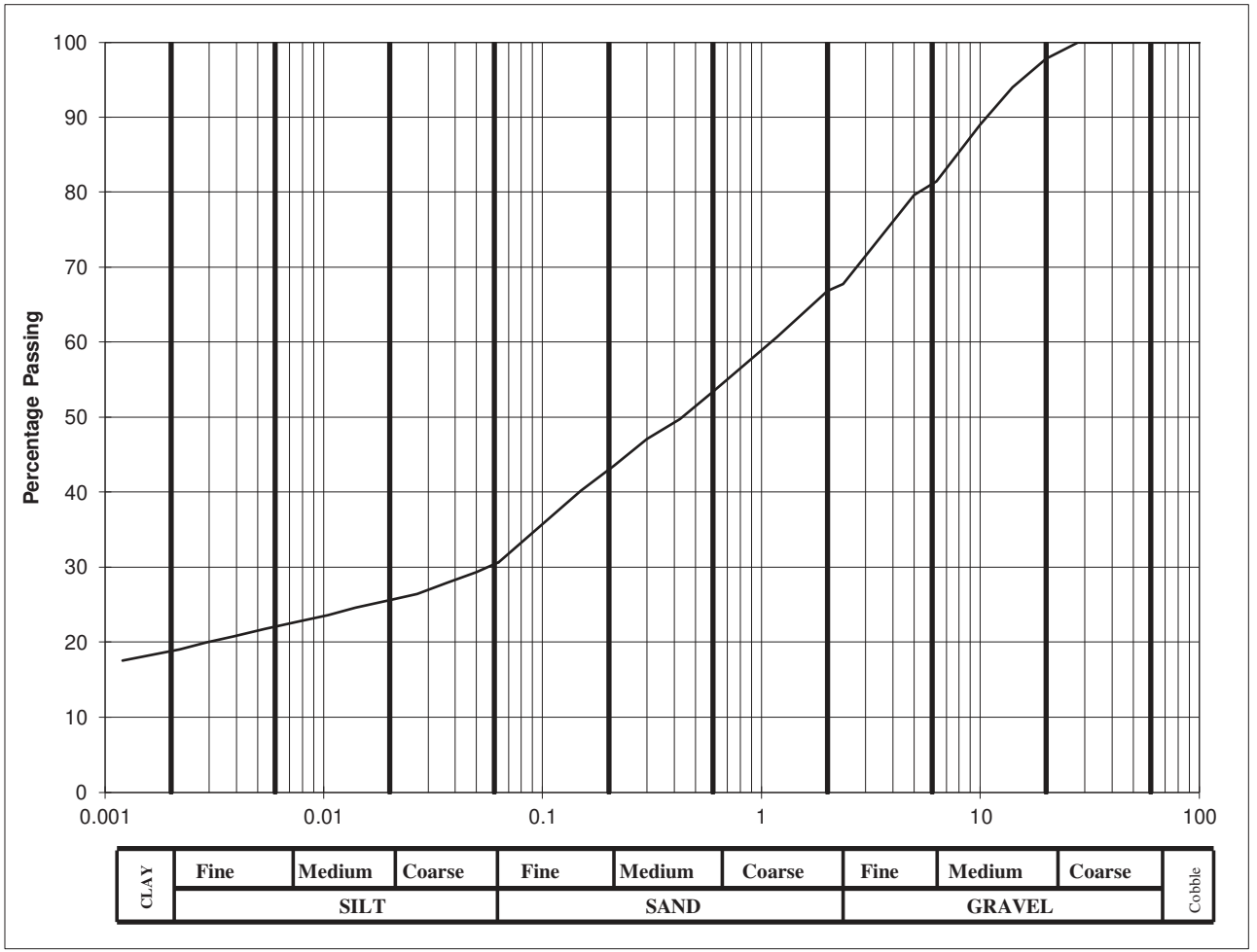
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BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	31
90	100	**0.0200**	26
75	100	**0.0060**	22
63	100	**0.0020**	18
50	100		
37.5	100		
28	100		
20	97.8		
14	94		
10	89		
6.3	81.4		
5.0	79.6		
2.36	67.7		
2.00	66.8		
1.18	60.7		
0.600	53.4		
0.425	49.7		
0.300	47.1		
0.212	43.5		
0.150	40.2		
0.063	31		



Cobbles, %	0
Gravel, %	33
Sand, %	36
Silt, %	13
Clay, %	18

Client :	Land Development Agency
Project :	Dundrum Central Development

Lab. No :	21/1064
Sample No :	MK71

Hole ID :	TP 24
Depth, m :	1.50

Material description :	sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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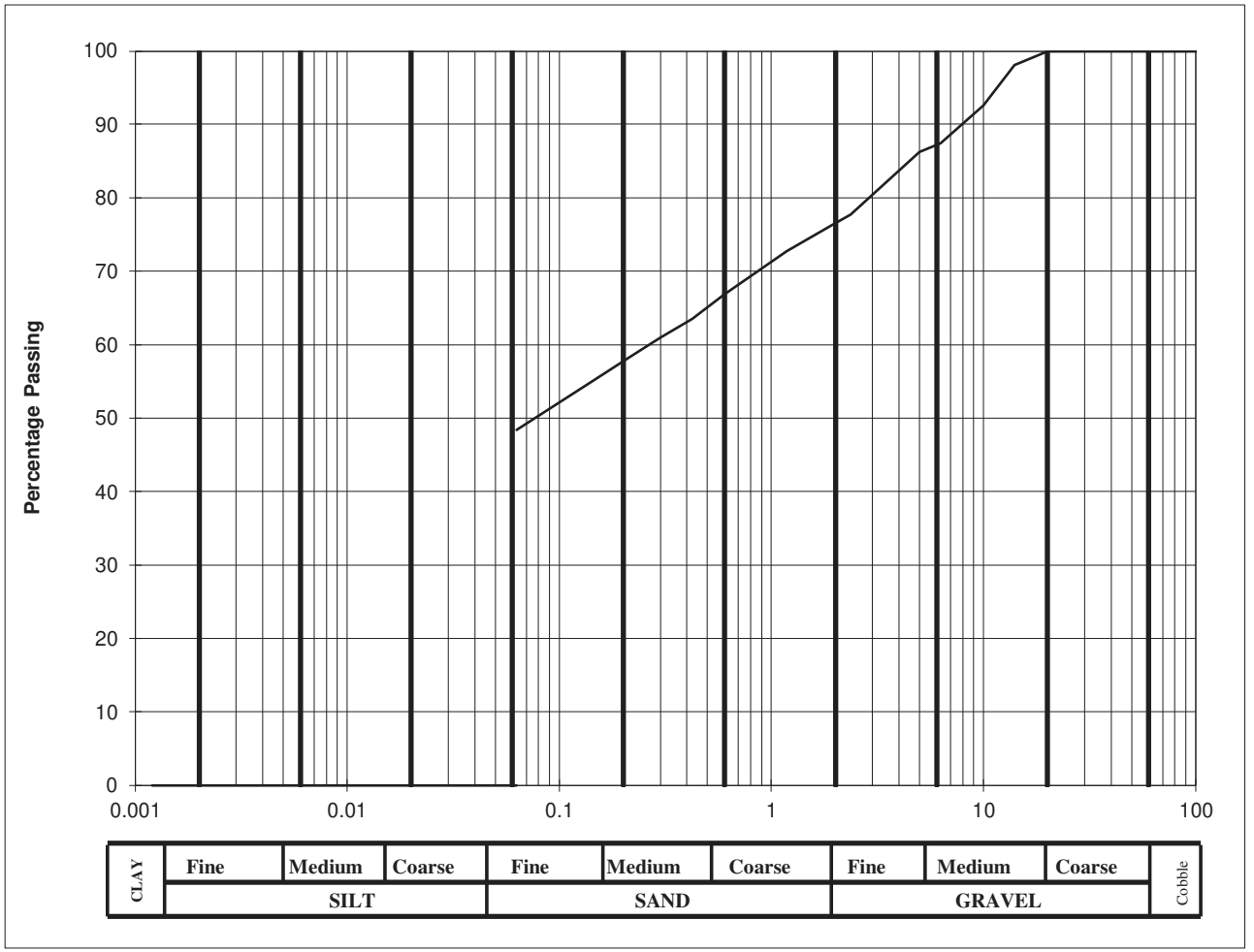
_____Paddy McGonagle
Site Investigations Ltd

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	100		
20	100		
14	98.1		
10	92.6		
6.3	87.4		
5.0	86.2		
2.36	77.7		
2.00	76.5		
1.18	72.7		
0.600	66.8		
0.425	63.5		
0.300	61		
0.212	58.2		
0.150	55.4		
0.063	48		

Cobbles, %	0
Gravel, %	24
Sand, %	29
Clay / Silt, %	48



Client :	Land Development Agency
Project :	Dundrum Central Development

Lab. No :	21/1065
Sample No :	MK74

Hole ID :	TP 25
Depth, m :	1.50

Material description :	slightly sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

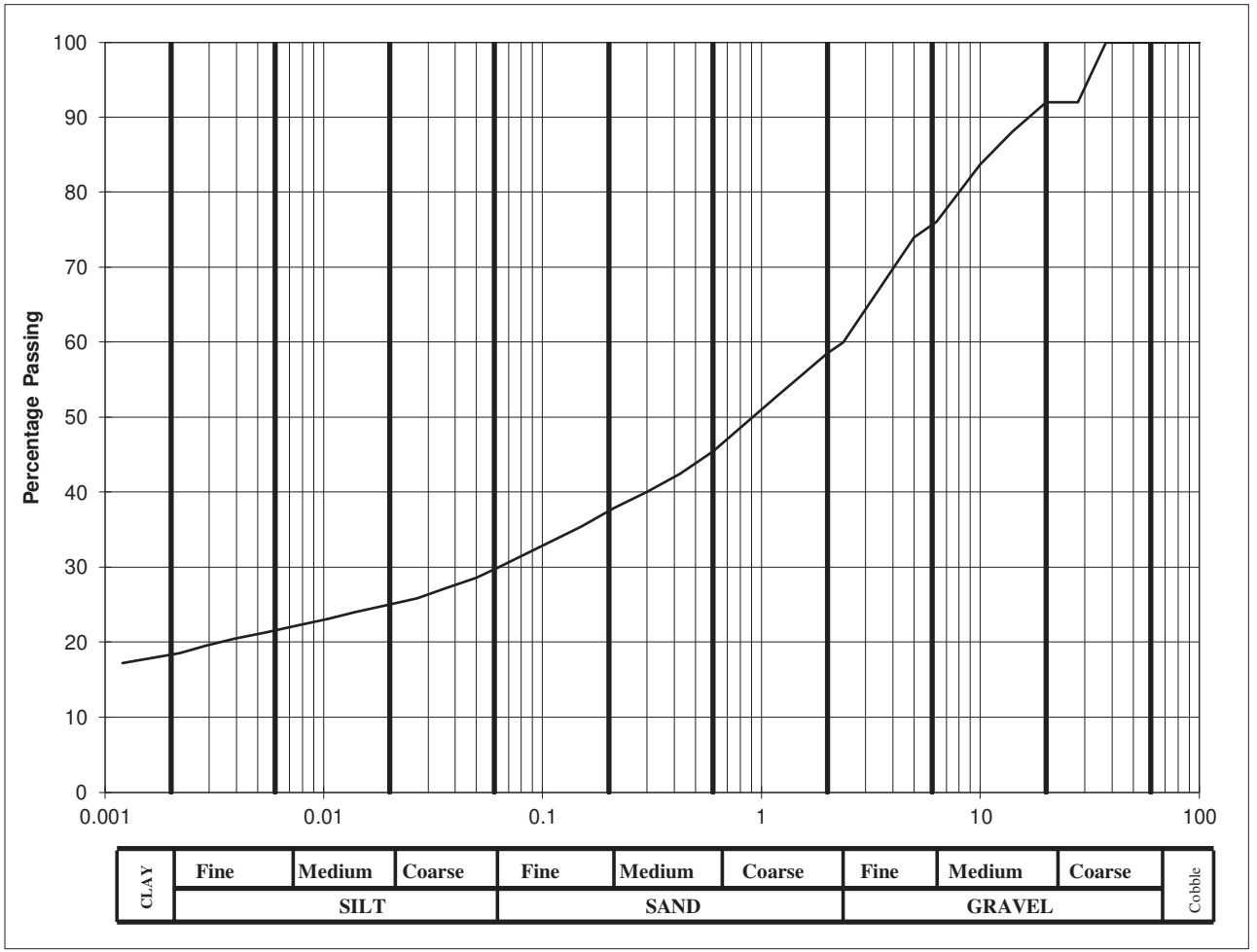
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BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	30
90	100	**0.0200**	25
75	100	**0.0060**	22
63	100	**0.0020**	18
50	100		
37.5	100		
28	92		
20	92		
14	88.1		
10	83.7		
6.3	76		
5.0	74		
2.36	59.9		
2.00	58.5		
1.18	52.8		
0.600	45.4		
0.425	42.4		
0.300	40		
0.212	37.9		
0.150	35.4		
0.063	30		



Cobbles, %	0
Gravel, %	42
Sand, %	29
Silt, %	12
Clay, %	18

Client :	Land Development Agency
Project :	Dundrum Central Development

Lab. No :	21/1067
Sample No :	MK78

Hole ID :	TP 26
Depth, m :	1.50

Material description :	slightly sandy gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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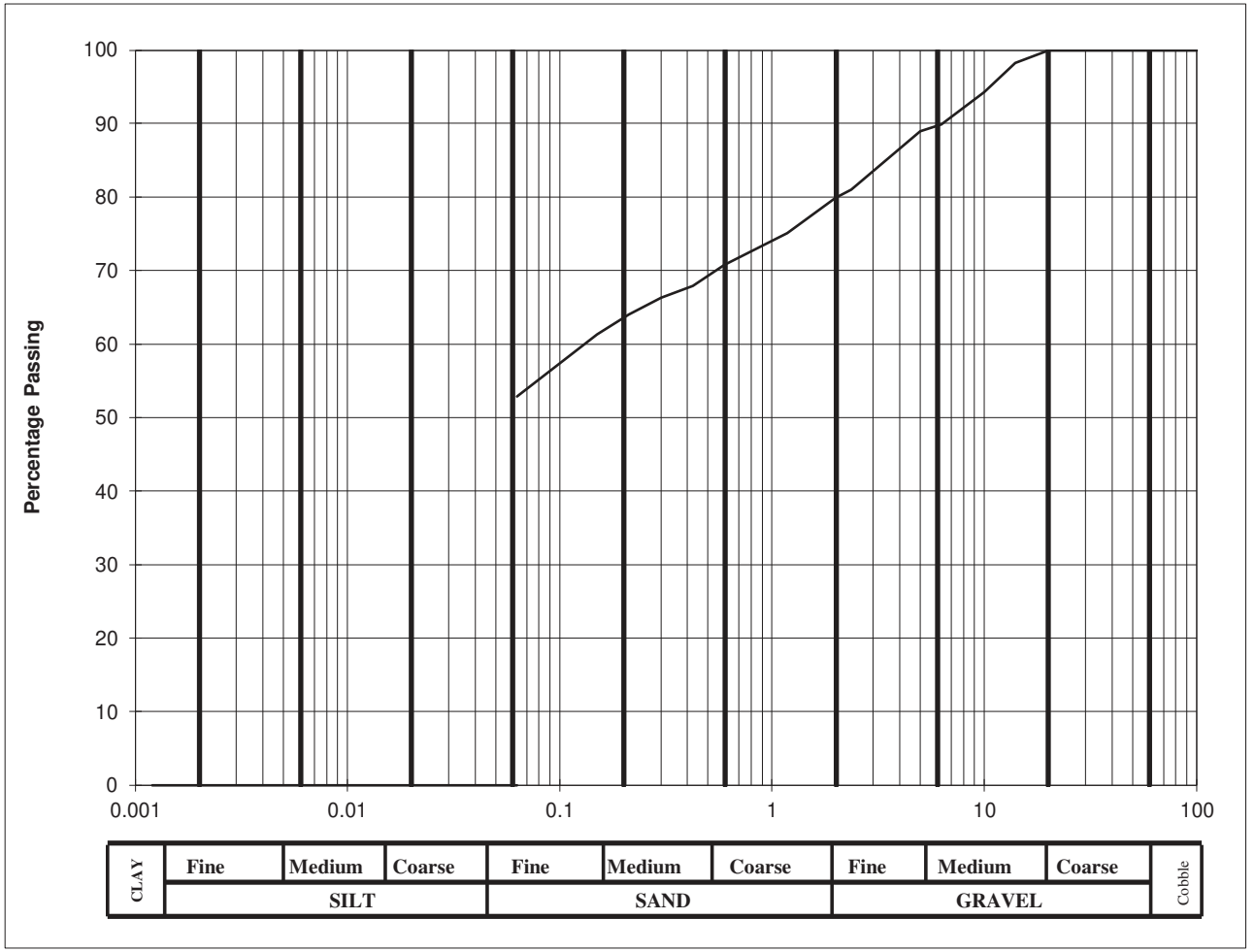
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BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	100		
20	100		
14	98.2		
10	94.3		
6.3	89.9		
5.0	88.9		
2.36	81		
2.00	79.9		
1.18	75.1		
0.600	70.8		
0.425	67.9		
0.300	66.3		
0.212	64		
0.150	61.3		
0.063	53		

Cobbles, %	0
Gravel, %	20
Sand, %	27
Clay / Silt, %	53



Client :	Land Development Agency	Lab. No :	21/1068	Hole ID :	TP 27
Project :	Dundrum Central Development	Sample No :	MK81	Depth, m :	1.50

Material description :	slightly sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

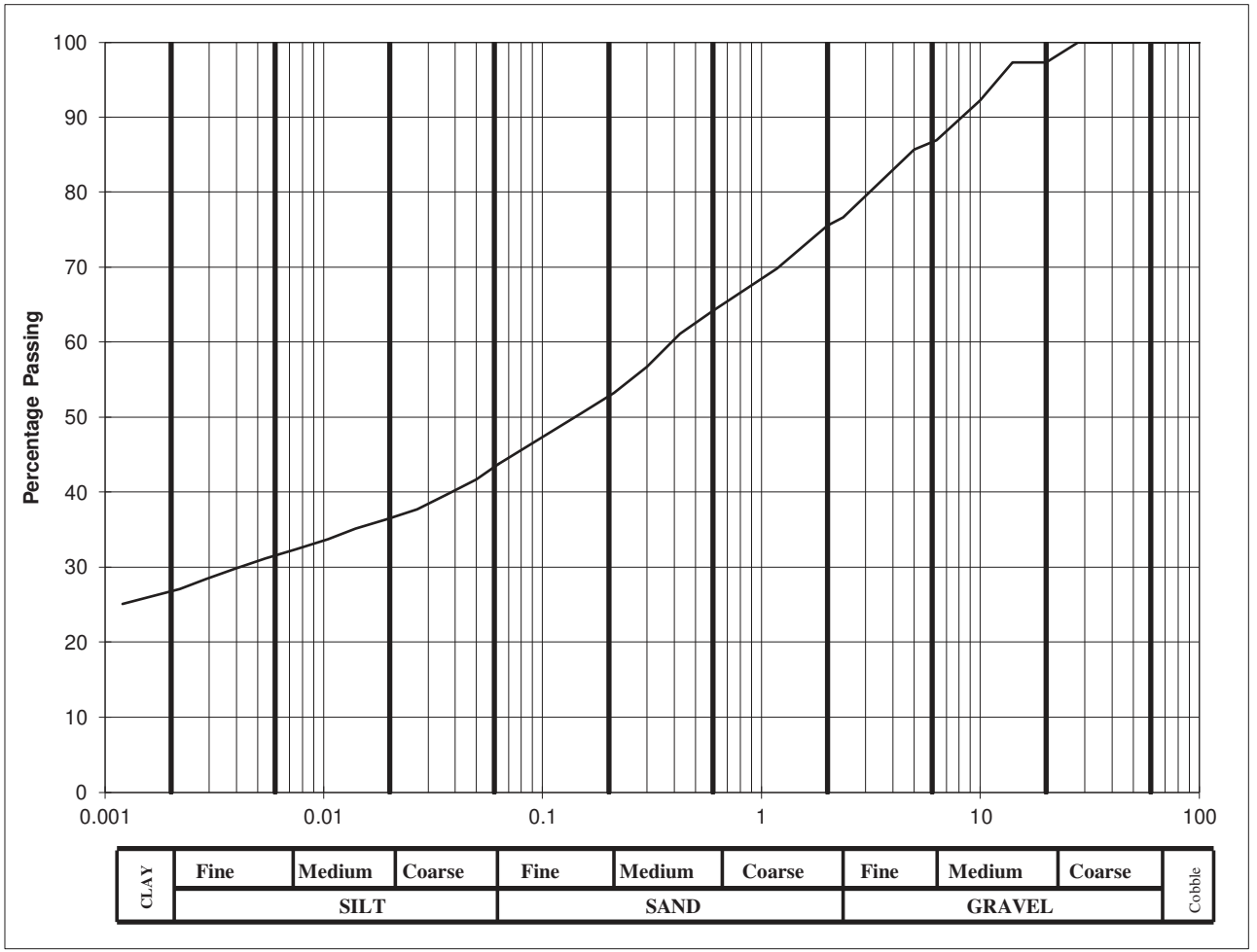
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Site Investigations Ltd

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	44
90	100	**0.0200**	37
75	100	**0.0060**	32
63	100	**0.0020**	27
50	100		
37.5	100		
28	100		
20	97.3		
14	97.3		
10	92.2		
6.3	86.9		
5.0	85.7		
2.36	76.6		
2.00	75.5		
1.18	69.8		
0.600	64.2		
0.425	61.1		
0.300	56.7		
0.212	53.2		
0.150	50.5		
0.063	44		



Cobbles, %	0
Gravel, %	25
Sand, %	32
Silt, %	17
Clay, %	27

Client :	Land Development Agency
Project :	Dundrum Central Development

Lab. No :	21/1069
Sample No :	MK84

Hole ID :	TP 28
Depth, m :	1.50

Material description :	slightly sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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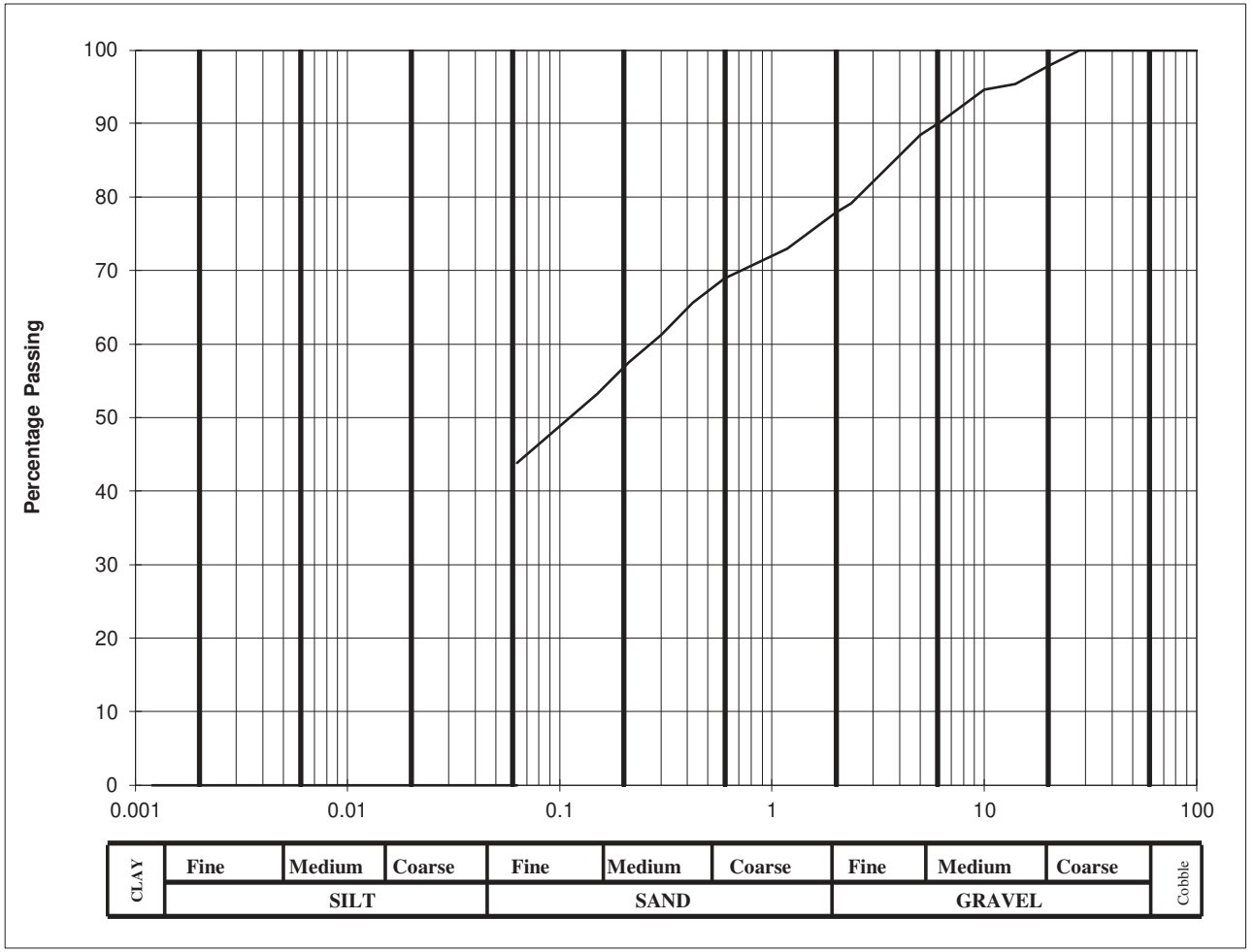
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Site Investigations Ltd

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	100		
20	97.8		
14	95.4		
10	94.6		
6.3	90.3		
5.0	88.4		
2.36	79.1		
2.00	77.9		
1.18	73		
0.600	68.9		
0.425	65.6		
0.300	61.2		
0.212	57.5		
0.150	53.2		
0.063	44		

Cobbles, %	0
Gravel, %	22
Sand, %	34
Clay / Silt, %	44



Client :	Land Development Agency
Project :	Dundrum Central Development

Lab. No :	21/1071
Sample No :	MK89

Hole ID :	TP 30
Depth, m :	0.60

Material description :	slightly sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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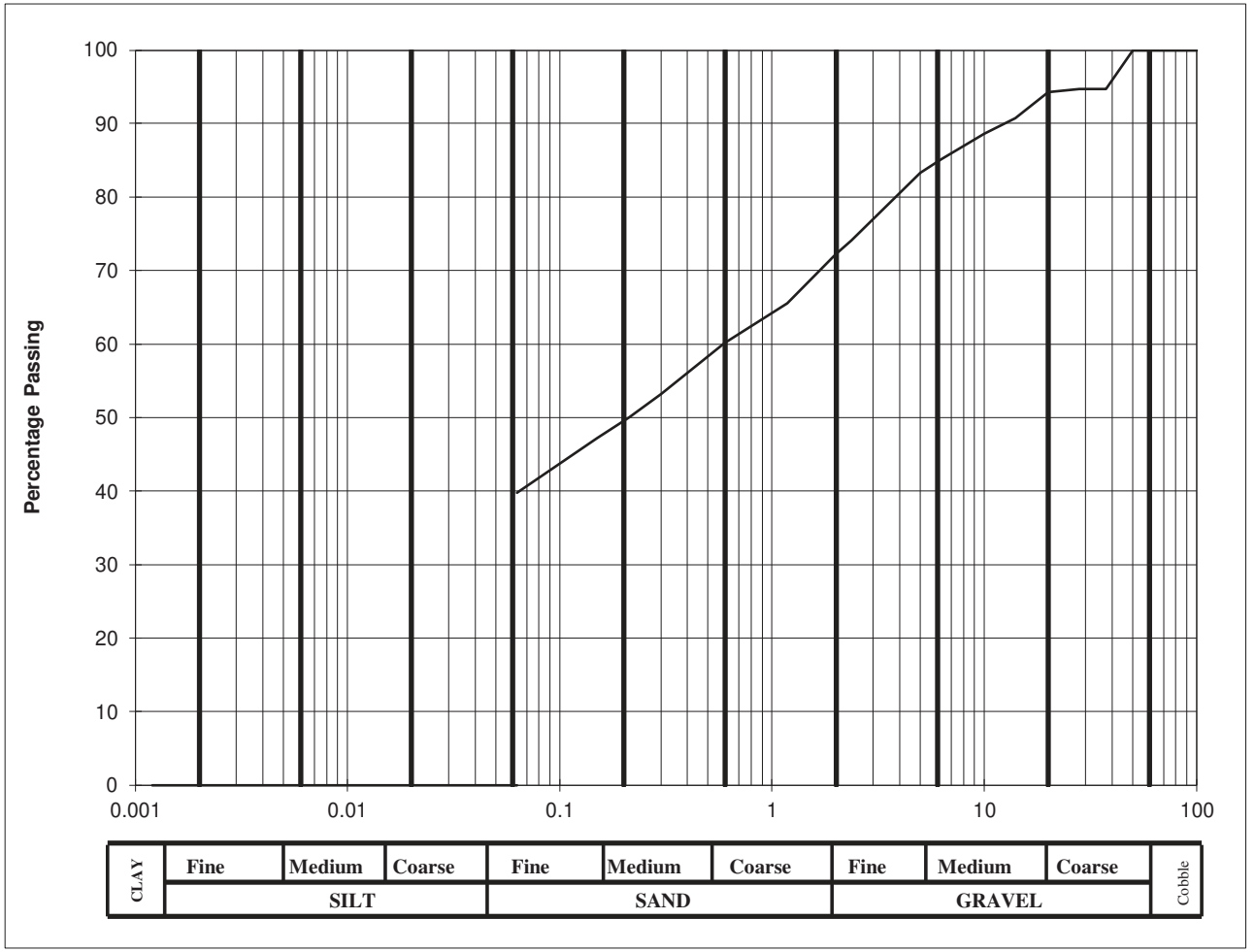
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BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	94.7		
28	94.7		
20	94.3		
14	90.7		
10	88.6		
6.3	85.1		
5.0	83.3		
2.36	74.1		
2.00	72.2		
1.18	65.5		
0.600	60.1		
0.425	56.7		
0.300	53.2		
0.212	50		
0.150	47.2		
0.063	40		

Cobbles, %	0
Gravel, %	28
Sand, %	32
Clay / Silt, %	40



Client :	Land Development Agency	Lab. No :	21/1073	Hole ID :	TP 31
Project :	Dundrum Central Development	Sample No :	MK894	Depth, m :	1.90

Material description :	slightly sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

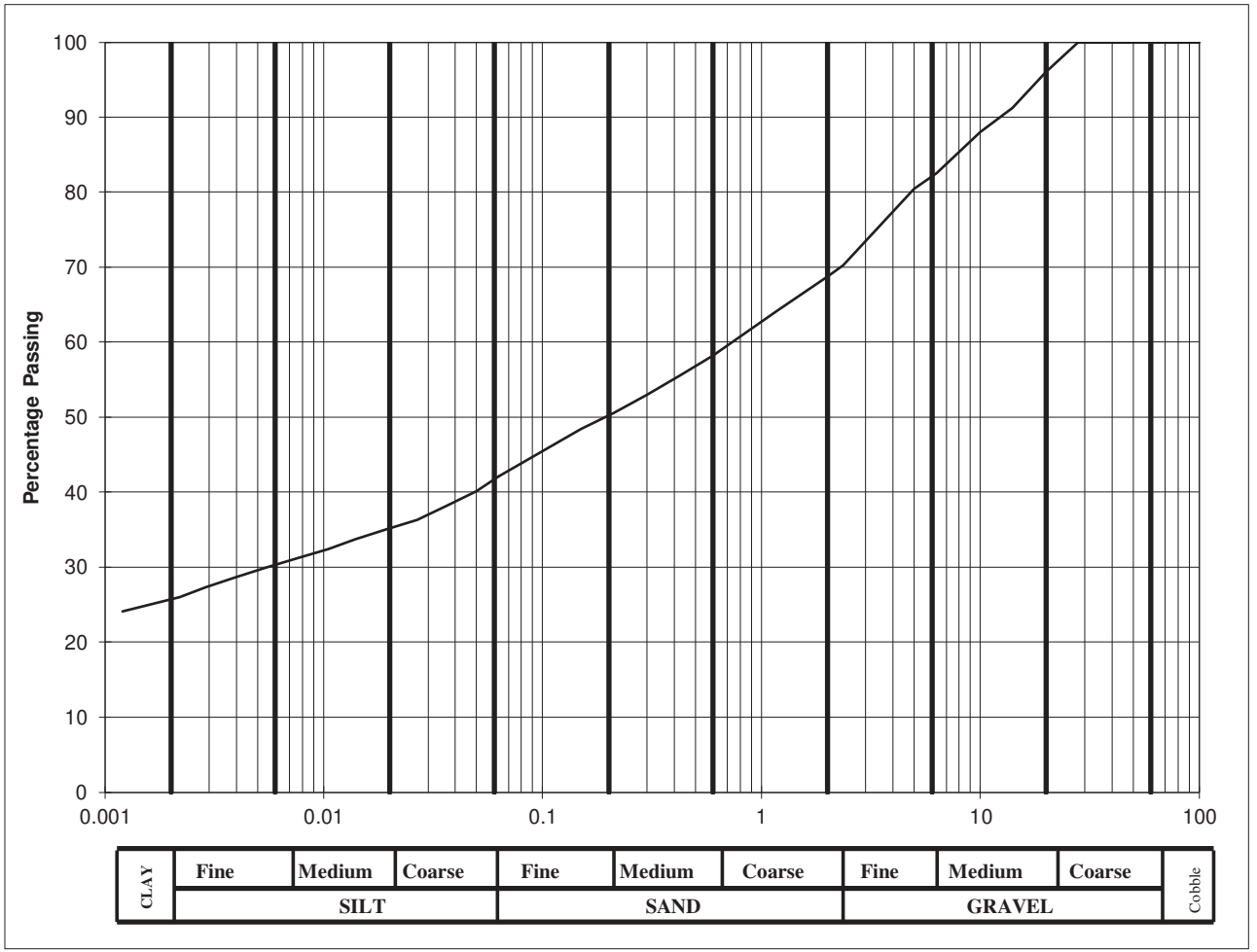
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BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	42
90	100	**0.0200**	35
75	100	**0.0060**	31
63	100	**0.0020**	26
50	100		
37.5	100		
28	100		
20	96		
14	91.2		
10	88		
6.3	82.5		
5.0	80.4		
2.36	70.2		
2.00	68.7		
1.18	64.2		
0.600	58.2		
0.425	55.5		
0.300	53		
0.212	50.6		
0.150	48.4		
0.063	42		



Cobbles, %	0
Gravel, %	31
Sand, %	27
Silt, %	16
Clay, %	26

Client :	Land Development Agency
Project :	Dundrum Central Development

Lab. No :	21/1076
Sample No :	MK101

Hole ID :	TP 33
Depth, m :	1.50

Material description :	slightly sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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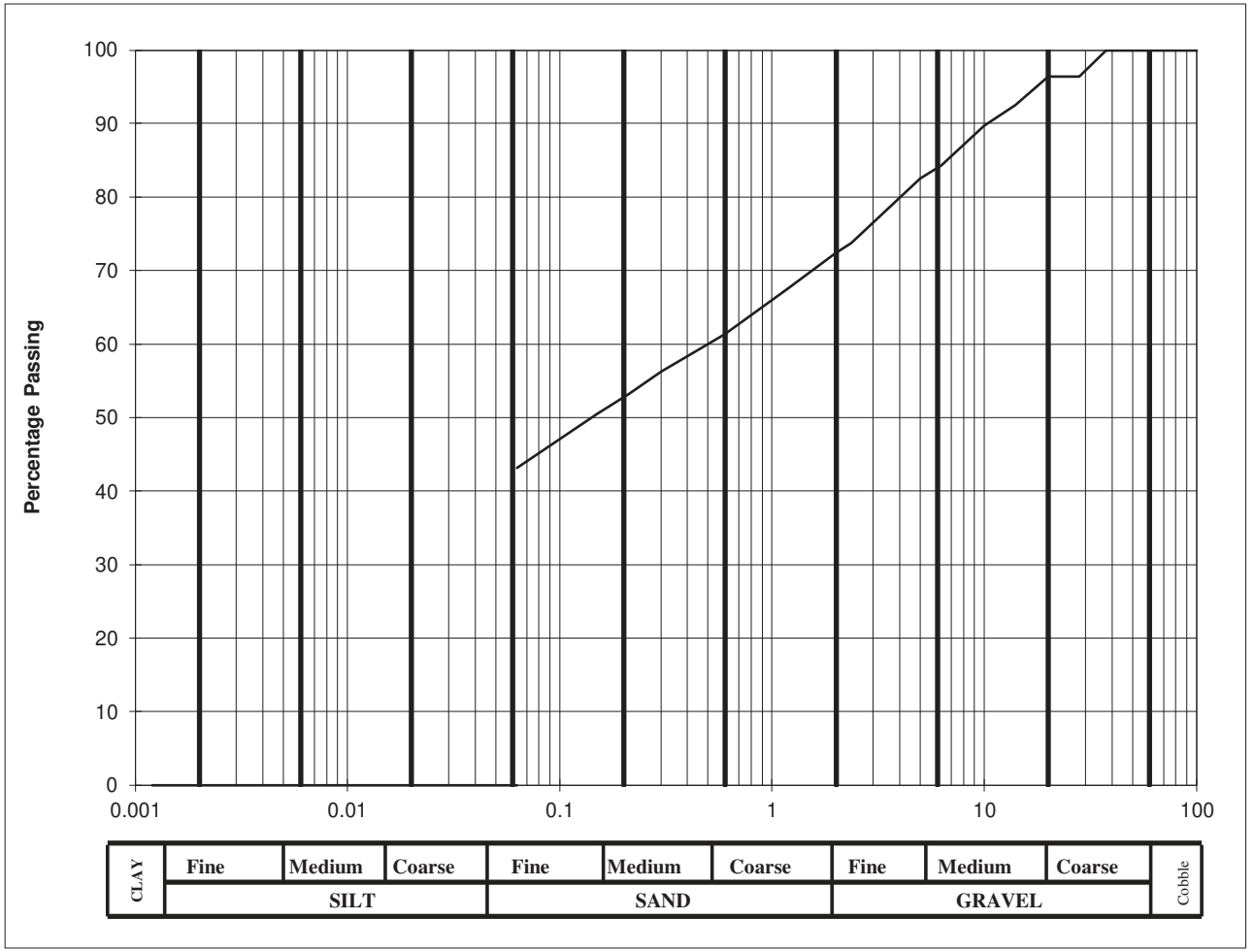
_____Paddy McGonagle
Site Investigations Ltd

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	96.4		
20	96.4		
14	92.5		
10	89.7		
6.3	84.3		
5.0	82.5		
2.36	73.7		
2.00	72.4		
1.18	67.5		
0.600	61.3		
0.425	58.8		
0.300	56.2		
0.212	53.2		
0.150	50.5		
0.063	43		

Cobbles, %	0
Gravel, %	28
Sand, %	29
Clay / Silt, %	43



Client :	Land Development Agency
Project :	Dundrum Central Development

Lab. No :	21/1079
Sample No :	MK108

Hole ID :	TP 35
Depth, m :	1.00

Material description :	slightly sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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California Bearing Ratio (CBR) In accordance with BS1377: Part 4: Method 7

Client	Land Development Agency
Site	Dundrum Central Development
S.I. File No	5811 / 21
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email info@siteinvestigations.ie
Report Date	7th October 2021

CBR No	Depth (mBGL)	Sample No	Sample Type	Lab Ref	Moisture Content (%)	CBR Value (%)	Location / Remarks
CBR01	0.40	MK200	CBR	21/1120	8.3	8.9	
CBR02	0.40	MK201	CBR	21/1121	8.5	6.7	
CBR03	0.40	MK202	CBR	21/1122	9.5	7.1	
CBR04	0.40	MK203	CBR	21/1123	13.0	6.4	
CBR05	0.40	MK204	CBR	21/1124	18.5	7.7	
CBR06	0.40	MK205	CBR	21/1125	10.8	7.5	
CBR07	0.40	MK206	CBR	21/1126	18.7	8.1	

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SHEAR BOX TEST

Test Method **BS 1377 : Part 7 : 1990 : Method 4**

Preparation procedure **Specimens prepared from intact block within sample bag**

Description **Grey/brown slightly sandy slightly gravelly SILT/CLAY**

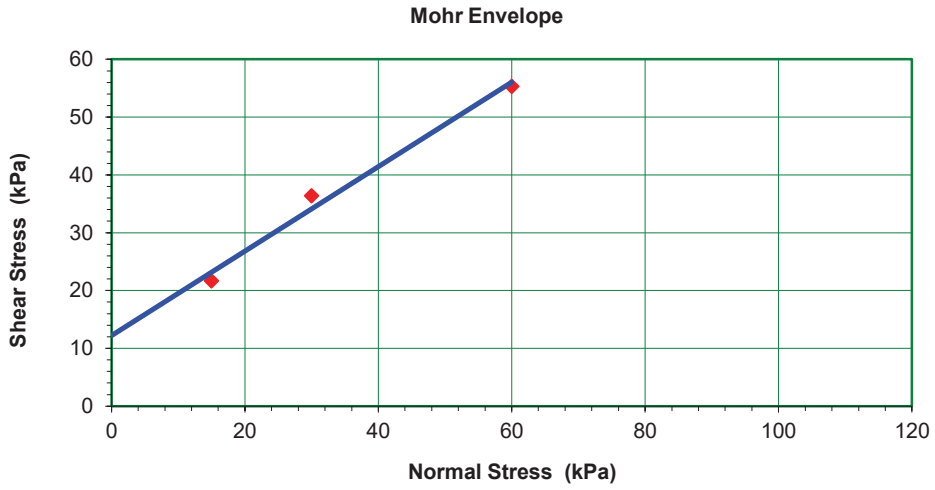
Weighings		**Stage 1**	**Stage 2**	**Stage 3**
Wet soil	gms	342.8	342.3	342.8
Dry soil	gms	160.2	160.2	160.1
Wet soil	gms	188.1	187.6	188.2
Dry soil	gms	160.2	160.2	160.1
Water	gms	27.9	27.4	28.0
Moisture Content (%)		17.4	17.1	17.5
Bulk Density (Mg/m3)		2.13	2.13	2.13
Dry density (Mg/m3)		1.82	1.82	1.82
Voids ratio e		0.4869	0.4866	0.4873
Degree of saturation (%)		96.7	94.9	97.0

Nominal Dimensions		
Length	L1 mm	60
	L2 mm	60
Area	A mm2	3600
Height	H mm	24.5
Volume	V cm3	88.2
Particle density	Mg/m3	2.70

Final Details

	Stage 1	**Stage 2**	**Stage 3**
Normal Loads(kPa)	15	30	60
Shear stress (kPa)	21.7	36.4	55.3
Horizontal Displacement (mm)	6.944	4.627	5.869
Vertical displacement (mm)	-0.654	-0.471	0.086
Rate of displacement (mm/min)		0.5000	

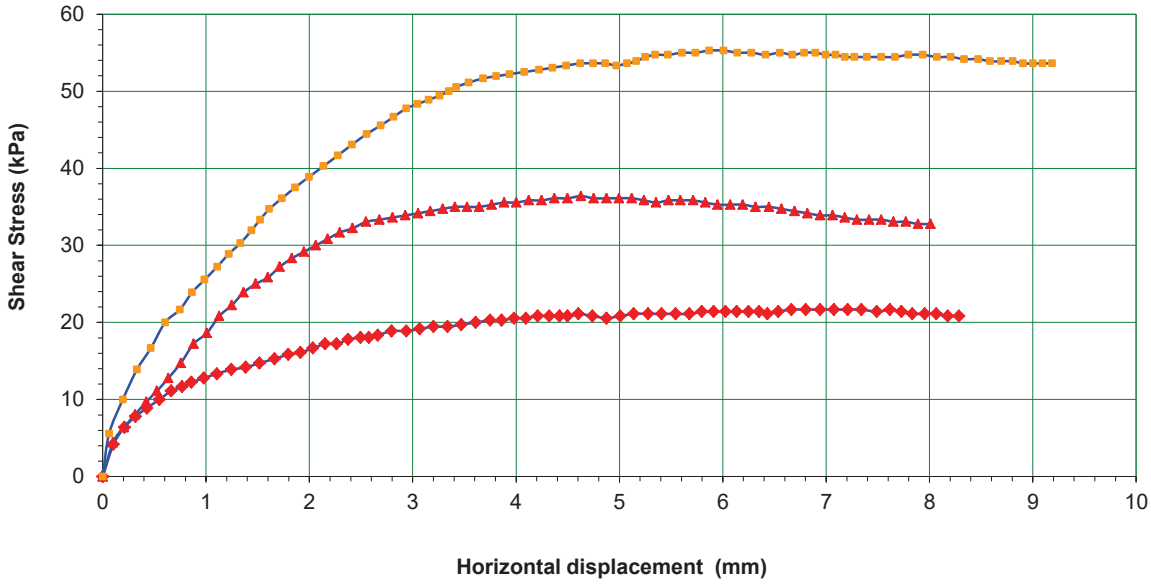
			Peak
Date sampled	n/a		
Date received	30/09/2021	Cohesion c' (kPa)	12.2
Date tested	20/10/2021	Friction angle phi'	36.1°

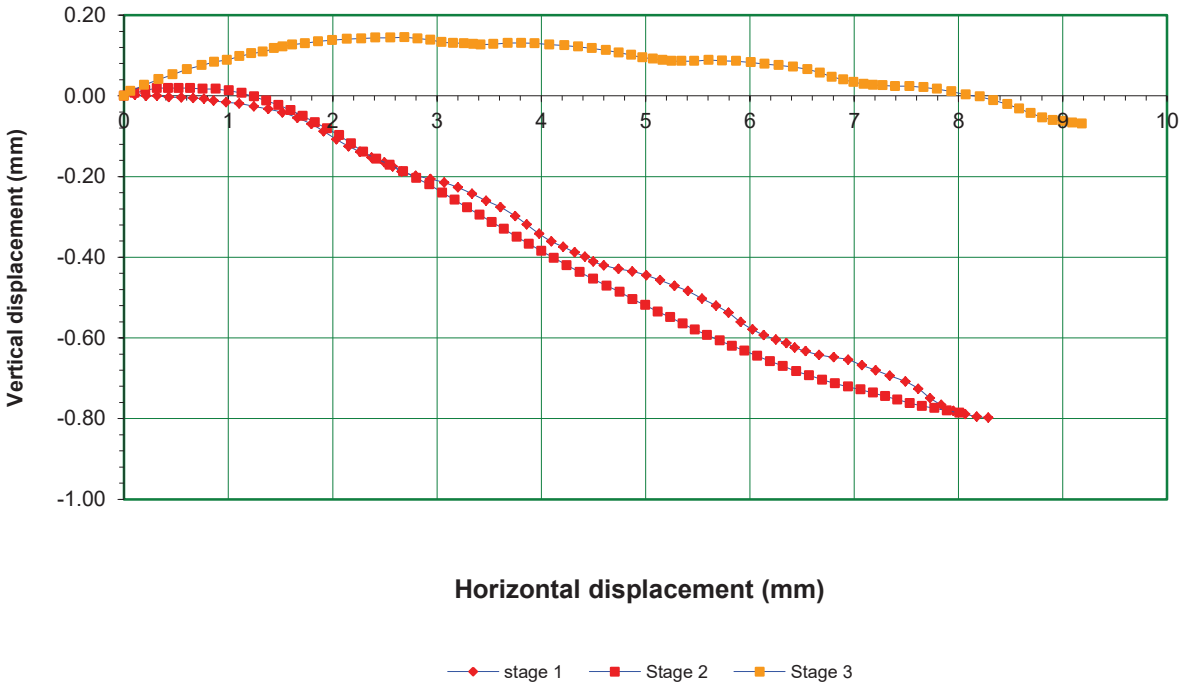


SIL PROJECT ID: 5811/21

NM T L Ltd	**Quick drained shear box in 60mm square shear box**			Job No. NMTL_3448
				Borehole No. TP08
	Project Dundrum Central Development			Sample No. MK25
Operator Sb	Checked Nc		Approved Bc	Depth. 1.50m

SHEAR STAGE





SIL PROJECT ID: 5811/21

NM T L Ltd	Quick drained shear box in 60mm square shear box			Job No.	NMTL_3448
				Borehole No.	TP08
	Project	Dundrum Central Development		Sample No.	MK25
Operator Sb	Checked	Nc	Approved Bc	Depth.	1.50m

SHEAR BOX TEST

Test Method **BS 1377 : Part 7 : 1990 : Method 4**

Preparation procedure **Remoulded with 2.5kg rammer at natural moisture content**

Description **Red/brown slightly gravelly slightly sandy clayey SILT.**

Weighings		**Stage 1**	**Stage 2**	**Stage 3**
Wet soil	gms	332.6	332.9	332.8
Dry soil	gms	148.5	149.1	148.9
Wet soil	gms	178.0	178.4	178.2
Dry soil	gms	148.5	149.1	148.9
Water	gms	29.5	29.2	29.3
Moisture Content (%)		19.8	19.6	19.7
Bulk Density (Mg/m3)		2.02	2.02	2.02
Dry density (Mg/m3)		1.68	1.69	1.69
Voids ratio e		0.6035	0.5970	0.5993
Degree of saturation (%)		88.8	88.7	88.7

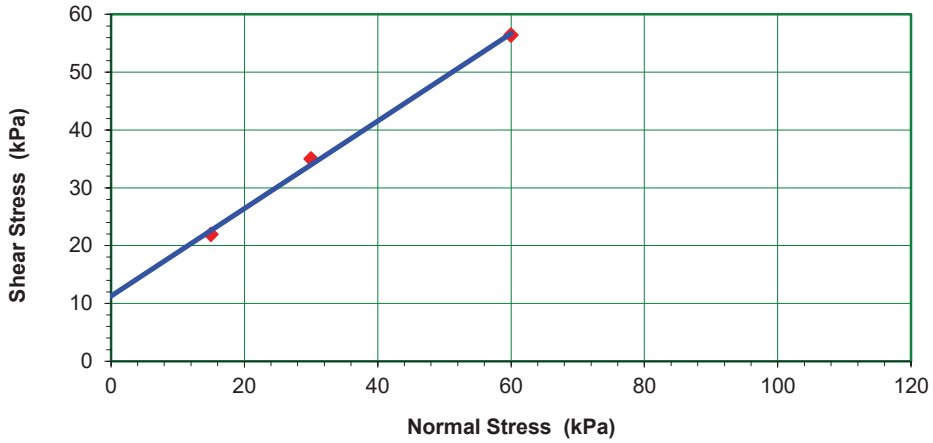
Nominal Dimensions		
Length	L1 mm	60
	L2 mm	60
Area	A mm2	3600
Height	H mm	24.5
Volume	V cm3	88.2
Particle density	Mg/m3	2.70

Final Details

	Stage 1	**Stage 2**	**Stage 3**
Normal Loads(kPa)	15	30	60
Shear stress (kPa)	21.9	35.0	56.4
Horizontal Displacement (mm)	3.170	3.009	3.400
Vertical displacement (mm)	-0.294	-0.261	-0.072
Rate of displacement (mm/min)		0.5000	

Date sampled	n/a		Peak
Date received	30/09/2021	Cohesion c' (kPa)	11.3
Date tested	20/10/2021	Friction angle phi'	37.2°

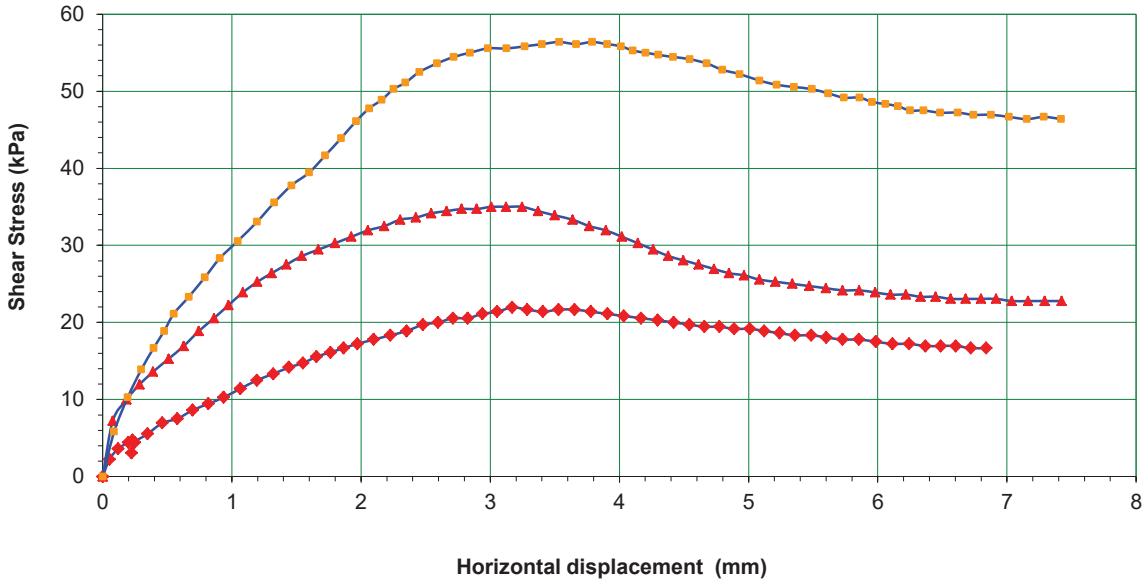
Mohr Envelope

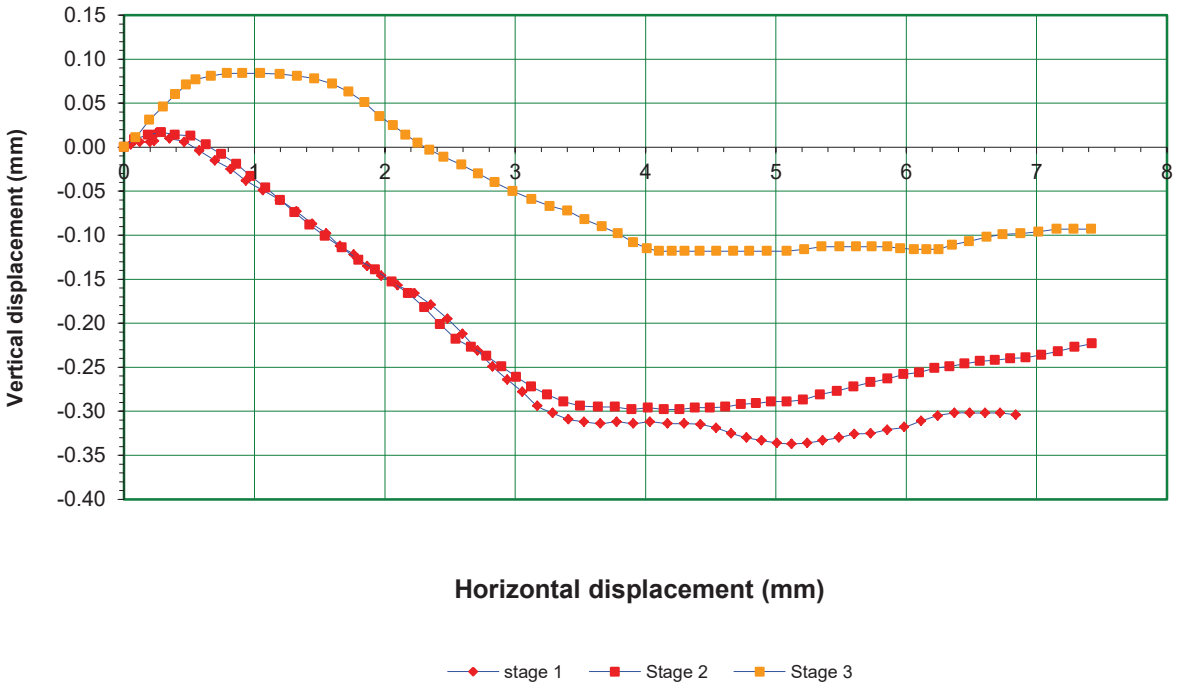


SIL PROJECT ID: 5811/21

NM T L Ltd	**Quick drained shear box in 60mm square shear box**		Job No.	NMTL_3448
			Borehole No.	TP11
	Project	Dundrum Central Development	Sample No.	MK34
Operator Sb	Checked Nc	Approved Bc	Depth.	1.20m

SHEAR STAGE





SIL PROJECT ID: 5811/21

NM T L Ltd	Quick drained shear box in 60mm square shear box			Job No.	NMTL_3448
				Borehole No.	TP11
	Project	Dundrum Central Development		Sample No.	MK34
Operator Sb	Checked	Nc	Approved Bc	Depth.	1.20m

SHEAR BOX TEST

Test Method **BS 1377 : Part 7 : 1990 : Method 4**

Preparation procedure **Specimen prepared from intack block within the sample bag.**

Description **Brown slightly sandy slightly gravelly SILT/CLAY**

Weighings		**Stage 1**	**Stage 2**	**Stage 3**
Wet soil	gms	349.7	349.7	349.7
Dry soil	gms	170.1	170.1	170.2
Wet soil	gms	195.2	195.0	195.2
Dry soil	gms	170.1	170.1	170.2
Water	gms	25.1	24.9	25.0
Moisture Content (%)		14.7	14.6	14.7
Bulk Density (Mg/m3)		2.21	2.21	2.21
Dry density (Mg/m3)		1.93	1.93	1.93
Voids ratio e		0.3998	0.3998	0.3990
Degree of saturation (%)		99.5	98.7	99.3

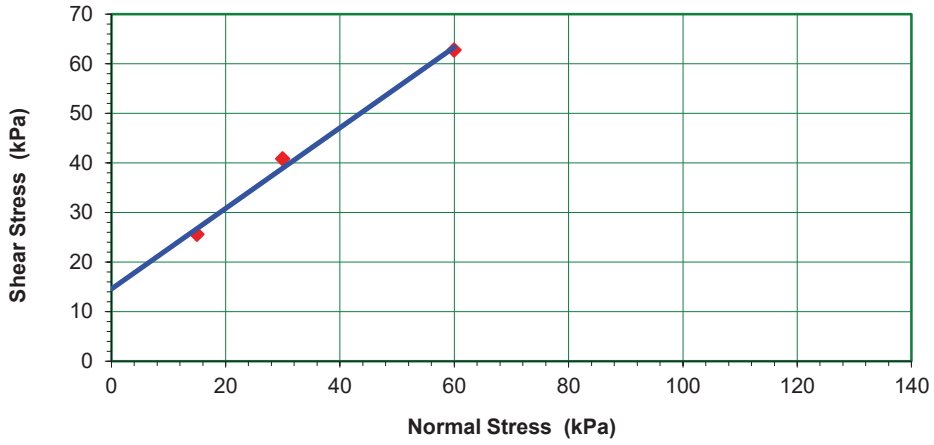
Nominal Dimensions		
Length	L1 mm	60
	L2 mm	60
Area	A mm2	3600
Height	H mm	24.5
Volume	V cm3	88.2
Particle density	Mg/m3	2.70

Final Details

	Stage 1	**Stage 2**	**Stage 3**
Normal Loads(kPa)	15	30	60
Shear stress (kPa)	25.6	40.8	62.8
Horizontal Displacement (mm)	4.717	6.489	5.975
Vertical displacement (mm)	-0.663	-0.720	-0.235
Rate of displacement (mm/min)		0.5000	

Date sampled	n/a		Peak
Date received	30/09/2021	Cohesion c' (kPa)	11.3
Date tested	20/10/2021	Friction angle phi'	39.1°

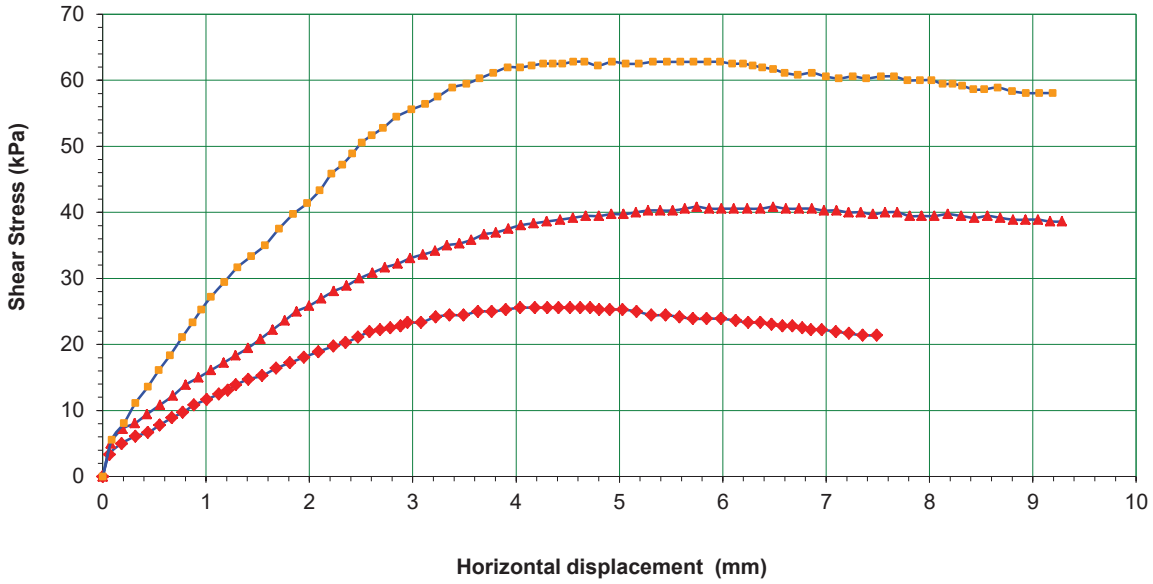
Mohr Envelope

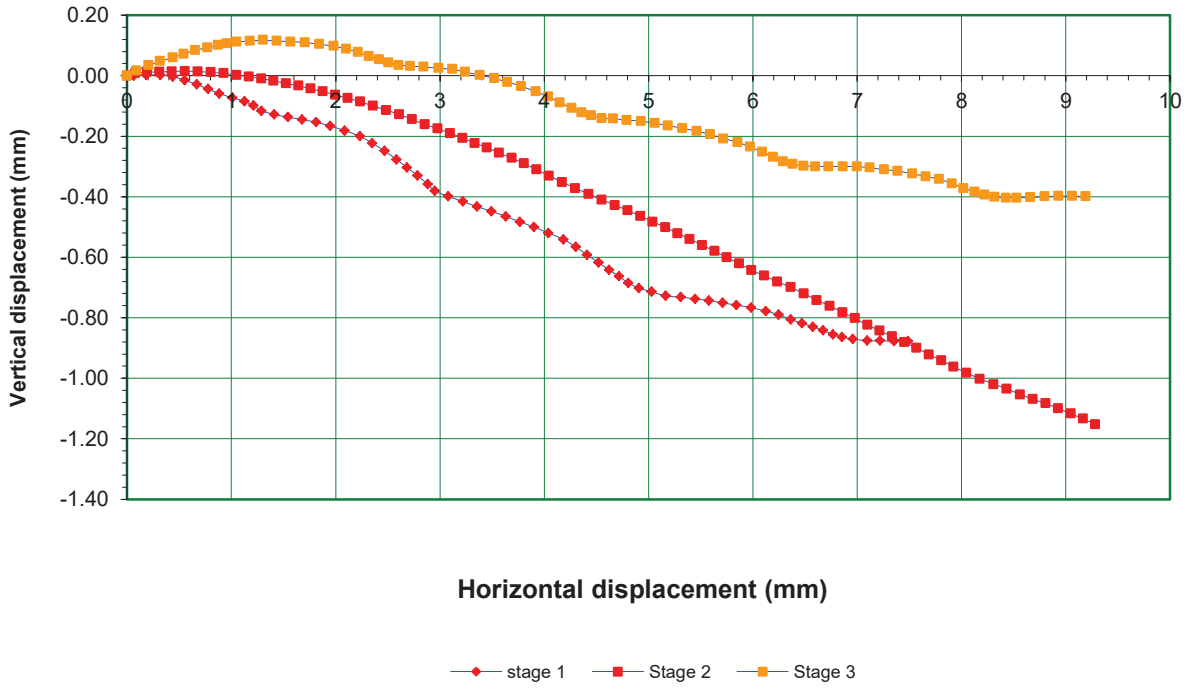


SIL PROJECT ID: 5811/21

NM T L Ltd	**Quick drained shear box in 60mm square shear box**			Job No. NMTL_3448
				Borehole No. TP28
	Project Dundrum Central Development			Sample No. MK84
Operator Sb	Checked Nc		Approved Bc	Depth. 1.50m

SHEAR STAGE





SIL PROJECT ID: 5811/21

NM T L Ltd	Quick drained shear box in 60mm square shear box			Job No.	NMTL_3448
				Borehole No.	TP28
	Project	Dundrum Central Development		Sample No.	MK84
Operator Sb	Checked	Nc	Approved Bc	Depth.	1.50m

Chemical Testing
In accordance with BS 1377: Part 3

Client	Land Development Agency
Site	Dundrum Central Development
S.I. File No	5811 / 21
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email:info@siteinvestigations.ie
Report Date	6th October 2021

Hole Id	Depth (mBGL)	Sample No	Lab Ref	pH Value	Water Soluble Sulphate Content (2:1 Water-soil extract) (SO_3) g/L	Water Soluble Sulphate Content (2:1 Water-soil extract) (SO_3) %	Loss on Ignition (Organic Content) %	Chloride ion Content (water:soil ratio 2:1) %	% passing 2mm	Remarks
TP03	1.50	MK08	21/1049	7.92	0.126	0.108			85.7	
TP07	1.50	MK22	21/1052	7.95	0.122	0.072			59.2	
TP08	1.50	MK25	21/1053	7.69	0.122	0.085			69.7	
TP16	1.30	MK49	21/1057	7.32	0.122	0.091			75.1	
TP20	1.50	MK62	21/1061	7.33	0.119	0.078			65.5	
TP24	1.50	MK71	21/1064	8.11	0.127	0.085			66.8	
TP26	1.50	MK78	21/1067	7.39	0.120	0.070			58.5	
TP28	1.50	MK84	21/1069	7.59	0.123	0.093			75.5	
TP30	0.60	MK89	21/1071	7.59	0.120	0.094			77.9	
TP33	1.50	MK101	21/1076	7.52	0.119	0.082			68.7	

Printed 08/11/2021

_____Paddy McGonagle
Site Investigations Ltd.

Appendix 7

Environmental Laboratory Test Results

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	21-33474-2		
Initial Date of Issue:	05-Oct-2021	**Date of Re-Issue:**	08-Oct-2021
Client	Site Investigations Ltd		
Client Address:	The Grange12th, Lock Road Lucan Co Dublin IRELAND		
Contact(s):	Stephen Letch		
Project	5811		
Quotation No.:		**Date Received:**	27-Sep-2021
Order No.:	60/A/21	**Date Instructed:**	27-Sep-2021
No. of Samples:	8		
Turnaround (Wkdays):	7	**Results Due:**	05-Oct-2021
Date Approved:	05-Oct-2021		
Approved By:			
Details:	Glynn Harvey, Technical Manager		

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	21-33476-1		
Initial Date of Issue:	04-Oct-2021		
Client	Site Investigations Ltd		
Client Address:	The Grange12th, Lock Road Lucan Co Dublin IRELAND		
Contact(s):	Stephen Letch		
Project	5811		
Quotation No.:		**Date Received:**	27-Sep-2021
Order No.:	60/A/21	**Date Instructed:**	27-Sep-2021
No. of Samples:	10		
Turnaround (Wkdays):	7	**Results Due:**	05-Oct-2021
Date Approved:	04-Oct-2021		
Approved By:			
Details:	Glynn Harvey, Technical Manager		

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	21-33480-1		
Initial Date of Issue:	04-Oct-2021		
Client	Site Investigations Ltd		
Client Address:	The Grange12th, Lock Road Lucan Co Dublin IRELAND		
Contact(s):	Stephen Letch		
Project	5811		
Quotation No.:		**Date Received:**	
Order No.:	60/A/21	**Date Instructed:**	27-Sep-2021
No. of Samples:	4		
Turnaround (Wkdays):	7	**Results Due:**	05-Oct-2021
Date Approved:	04-Oct-2021		

Approved By:



Details: Glynn Harvey, Technical Manager

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	21-33504-1		
Initial Date of Issue:	07-Oct-2021		
Client	Site Investigations Ltd		
Client Address:	Main Street Newcastle County Dublin Ireland		
Contact(s):	Stephen Letch		
Project	5811		
Quotation No.:		**Date Received:**	27-Sep-2021
Order No.:	60/A/21	**Date Instructed:**	27-Sep-2021
No. of Samples:	48		
Turnaround (Wkdays):	7	**Results Due:**	05-Oct-2021
Date Approved:	07-Oct-2021		
Approved By:			
Details:	Glynn Harvey, Technical Manager		

Results - Leachate

Project: 5811

Client: Site Investigations Ltd					**Chemtest Job No.:**	21-33474	21-33474	21-33474	21-33474	21-33474	21-33474	21-33474	21-33474	21-33476	21-33476	21-33476
Quotation No.:					**Chemtest Sample ID.:**	1286930	1286931	1286932	1286933	1286934	1286935	1286936	1286937	1286943	1286944	1286945
Order No.: 60/A/21					Client Sample Ref.:	ES49	ES50	ES51	ES52	ES53	ES54	ES55	ES56	ES57	ES58	ES59
					Client Sample ID.:	1	2	1	2	1	2	1	2	1	2	3
					Sample Location:	TP33	TP33	TP34	TP34	TP35	TP35	TP36	TP36	TP05	TP05	TP05
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.30	1.00	0.30	0.80	0.30	1.00	0.30	0.80	0.30	0.50	1.00
					Bottom Depth (m):	0.30	1.00	0.30	0.80	0.30	1.00	0.30	0.80	0.30	0.50	1.00
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**											
Ammonium	U	1220	10:1	mg/l	0.050	< 0.050	< 0.050	0.056	< 0.050	0.12	< 0.050	0.065	0.054	< 0.050	0.070	0.054
Ammonium	N	1220	10:1	mg/kg	0.10	0.53	0.44	0.68	0.33	1.4	0.28	0.76	0.66	0.31	0.84	0.76

Results - Leachate

Project: 5811

Client: Site Investigations Ltd					**Chemtest Job No.:**	21-33476	21-33476	21-33476	21-33476	21-33476	21-33476	21-33476	21-33480	21-33480	21-33480	21-33480
Quotation No.:					**Chemtest Sample ID.:**	1286946	1286947	1286948	1286949	1286950	1286951	1286952	1286961	1286962	1286963	1286964
Order No.: 60/A/21					Client Sample Ref.:	ES60	ES61	ES62	ES63	ES64	ES65	ES66	ES67	ES68	ES69	ES70
					Client Sample ID.:	1	2	1	2	3	1	2	1	2	1	2
					Sample Location:	TP06	TP06	TP09	TP09	TP09	TP10	TP10	TP11	TP11	TP12	TP12
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.30	1.00	0.30	1.00	1.50	0.30	1.40	0.30	1.00	0.30	1.00
					Bottom Depth (m):	0.30	1.00	0.30	1.00	1.50	0.30	1.40	0.30	1.00	0.30	1.00
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**											
Ammonium	U	1220	10:1	mg/l	0.050	0.073	< 0.050	< 0.050	< 0.050	< 0.050	0.16	0.055	0.061	< 0.050	0.066	0.059
Ammonium	N	1220	10:1	mg/kg	0.10	0.91	0.52	0.43	0.56	0.58	1.8	0.63	0.65	0.41	0.74	0.70

Results - Leachate

Project: 5811

Client: Site Investigations Ltd					**Chemtest Job No.:**	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:					**Chemtest Sample ID.:**	1287123	1287124	1287125	1287126	1287127	1287128	1287129	1287130	1287131	1287132	1287133
Order No.: 60/A/21					Client Sample Ref.:	ES1	ES2	ES3	ES4	ES5	ES6	ES7	ES8	ES9	ES10	ES11
					Client Sample ID.:	1	2	1	2	1	2	1	2	1	2	1
					Sample Location:	TP1	TP1	TP2	TP2	TP3	TP3	TP4	TP4	TP7	TP7	TP8
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.30	1.00	0.20	1.40	0.30	1.20	0.40	1.50	0.30	1.00	0.30
					Bottom Depth (m):	0.30	1.00	0.20	1.40	0.30	1.20	0.40	1.50	0.30	1.00	0.30
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**											
Ammonium	U	1220	10:1	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.061	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Ammonium	N	1220	10:1	mg/kg	0.10	0.32	0.16	0.54	2.1	1.2	0.58	0.60	0.19	0.23	< 0.10	< 0.10

Results - Leachate

Project: 5811

Client: Site Investigations Ltd					**Chemtest Job No.:**	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:					**Chemtest Sample ID.:**	1287134	1287135	1287136	1287137	1287138	1287139	1287140	1287141	1287142	1287143	1287144
Order No.: 60/A/21					Client Sample Ref.:	ES12	ES13	ES14	ES15	ES16	ES17	ES18	ES19	ES20	ES21	ES22
					Client Sample ID.:	2	1	2	1	2	1	2	1	2	1	2
					Sample Location:	TP8	TP13	TP13	TP14	TP14	TP15	TP15	TP16	TP16	TP17	TP17
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	1.00	0.30	1.00	0.30	1.00	0.30	1.00	0.30	0.60	0.30	0.60
					Bottom Depth (m):	1.00	0.30	1.00	0.30	1.00	0.30	1.00	0.30	0.60	0.30	0.60
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**											
Ammonium	U	1220	10:1	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.072	0.064	0.061	0.076	0.068	0.058	0.054
Ammonium	N	1220	10:1	mg/kg	0.10	0.51	0.19	0.61	0.27	1.0	0.68	0.63	0.81	0.75	0.62	0.58

Results - Leachate

Project: 5811

Client: Site Investigations Ltd					**Chemtest Job No.:**	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:					**Chemtest Sample ID.:**	1287145	1287146	1287147	1287148	1287149	1287150	1287151	1287152	1287153	1287154	1287155
Order No.: 60/A/21					Client Sample Ref.:	ES23	ES24	ES25	ES26	ES27	ES28	ES29	ES30	ES31	ES32	ES33
					Client Sample ID.:	1	2	1	2	1	2	1	2	1	2	1
					Sample Location:	TP18	TP18	TP19	TP19	TP20	TP20	TP22	TP22	TP23	TP23	TP24
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.30	1.00	0.30	0.80	0.40	0.80	0.30	1.00	0.30	0.80	0.30
					Bottom Depth (m):	0.30	1.00	0.30	0.80	0.40	0.80	0.30	1.00	0.30	0.80	0.30
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**											
Ammonium	U	1220	10:1	mg/l	0.050	0.056	0.065	< 0.050	0.051	< 0.050	< 0.050	0.061	0.12	0.078	0.064	0.082
Ammonium	N	1220	10:1	mg/kg	0.10	0.59	0.72	0.15	0.54	0.53	0.25	0.65	1.3	0.86	0.70	0.86

Results - Leachate

Project: 5811

Client: Site Investigations Ltd						**Chemtest Job No.:**	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:						**Chemtest Sample ID.:**	1287156	1287157	1287158	1287159	1287160	1287161	1287162	1287163	1287164	1287165	1287166
Order No.: 60/A/21						Client Sample Ref.:	ES34	ES35	ES36	ES37	ES38	ES39	ES40	ES41	ES42	ES43	ES44
						Client Sample ID.:	2	1	2	1	2	1	2	1	2	1	2
						Sample Location:	TP24	TP25	TP25	TP26	TP26	TP27	TP27	TP28	TP28	TP30	TP30
						Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						Top Depth (m):	1.00	0.30	1.00	0.30	1.20	0.30	1.00	0.20	1.00	0.30	0.90
						Bottom Depth (m):	1.00	0.30	1.00	0.30	1.20	0.30	1.00	0.30	1.00	0.30	0.90
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**												
Ammonium	U	1220	10:1	mg/l	0.050		< 0.050	0.062	0.064	0.058	< 0.050	0.065	0.064	0.055	0.076	0.082	< 0.050
Ammonium	N	1220	10:1	mg/kg	0.10		0.48	0.66	0.70	0.63	0.41	0.68	0.72	0.60	0.90	0.88	0.51

Results - Leachate

Project: 5811

Client: Site Investigations Ltd				**Chemtest Job No.:**		21-33504	21-33504	21-33504	21-33504
Quotation No.:				**Chemtest Sample ID.:**		1287167	1287168	1287169	1287170
Order No.: 60/A/21				Client Sample Ref.:		ES45	ES46	ES47	ES48
				Client Sample ID.:		1	2	1	2
				Sample Location:		TP31	TP31	TP32	TP32
				Sample Type:		SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		0.30	1.50	0.30	1.00
				Bottom Depth (m):		0.30	1.50	0.30	1.00
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**				
Ammonium	U	1220	10:1	mg/l	0.050	0.065	< 0.050	0.061	< 0.050
Ammonium	N	1220	10:1	mg/kg	0.10	0.69	0.52	0.67	0.55

Results - Soil

Project: 5811

Client: Site Investigations Ltd			**Chemtest Job No.:**		21-33474	21-33474	21-33474	21-33474	21-33474	21-33474	21-33474	21-33474	21-33476
Quotation No.:			**Chemtest Sample ID.:**		1286930	1286931	1286932	1286933	1286934	1286935	1286936	1286937	1286943
Order No.: 60/A/21			Client Sample Ref.:		ES49	ES50	ES51	ES52	ES53	ES54	ES55	ES56	ES57
			Client Sample ID.:		1	2	1	2	1	2	1	2	1
			Sample Location:		TP33	TP33	TP34	TP34	TP35	TP35	TP36	TP36	TP05
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.30	1.00	0.30	0.80	0.30	1.00	0.30	0.80	0.30
			Bottom Depth (m):		0.30	1.00	0.30	0.80	0.30	1.00	0.30	0.80	0.30
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	13	12	13	15	12	11	15	12	5.0
pH	M	2010		4.0	[A] 8.5	[A] 8.5	[A] 8.3	[A] 8.6	[A] 8.3	[A] 8.6	[A] 8.2	[A] 8.5	[A] 8.3
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	[A] < 0.40	[A] 0.59	[A] 0.63	[A] < 0.40	[A] 1.2	[A] < 0.40	[A] 0.90	[A] < 0.40	[A] < 0.40
Sulphur (Elemental)	M	2180	mg/kg	1.0	[A] 20	[A] 3.2	[A] 13	[A] < 1.0	[A] 8.2	[A] < 1.0	[A] 12	[A] 2.7	[A] 16
Cyanide (Total)	M	2300	mg/kg	0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	[A] 9.6	[A] 15	[A] 3.2	[A] 4.9	[A] 2.5	[A] 6.5	[A] 2.4	[A] 4.5	[A] 3.9
Sulphate (Total)	M	2430	%	0.010	[A] 0.16	[A] 0.093	[A] 0.12	[A] 0.053	[A] 0.16	[A] 0.086	[A] 0.21	[A] 0.042	[A] 0.15
Arsenic	M	2450	mg/kg	1.0	28	25	30	31	39	26	32	27	60
Barium	M	2450	mg/kg	10	140	89	150	110	220	99	430	58	160
Cadmium	M	2450	mg/kg	0.10	1.6	2.8	1.7	3.3	2.8	3.2	1.3	3.1	2.9
Chromium	M	2450	mg/kg	1.0	29	22	33	34	35	22	30	25	32
Molybdenum	M	2450	mg/kg	2.0	3.8	4.5	3.8	4.9	4.7	6.1	7.0	5.2	4.5
Antimony	N	2450	mg/kg	2.0	3.0	2.5	3.1	2.9	4.8	2.6	4.6	2.3	3.6
Copper	M	2450	mg/kg	0.50	92	70	93	48	130	72	180	39	120
Mercury	M	2450	mg/kg	0.10	0.81	0.19	0.74	< 0.10	0.86	0.12	0.84	0.11	0.58
Nickel	M	2450	mg/kg	0.50	54	61	57	85	69	71	97	54	63
Lead	M	2450	mg/kg	0.50	190	48	200	41	280	42	680	55	180
Selenium	M	2450	mg/kg	0.20	0.78	0.21	0.78	0.22	0.78	0.21	1.2	0.37	1.1
Zinc	M	2450	mg/kg	0.50	180	96	180	110	280	96	320	110	170
Chromium (Trivalent)	N	2490	mg/kg	1.0	29	22	33	34	35	22	30	25	32
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total Organic Carbon	M	2625	%	0.20	[A] 4.6	[A] 0.81	[A] 5.9	[A] 0.30	[A] 3.1	[A] 0.86	[A] 16	[A] 0.59	[A] 3.6
Mineral Oil (TPH Calculation)	N	2670	mg/kg	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0

Results - Soil

Project: 5811

Client: Site Investigations Ltd		**Chemtest Job No.:**			21-33474	21-33474	21-33474	21-33474	21-33474	21-33474	21-33474	21-33474	21-33476
Quotation No.:		**Chemtest Sample ID.:**			1286930	1286931	1286932	1286933	1286934	1286935	1286936	1286937	1286943
Order No.: 60/A/21		Client Sample Ref.:			ES49	ES50	ES51	ES52	ES53	ES54	ES55	ES56	ES57
		Client Sample ID.:			1	2	1	2	1	2	1	2	1
		Sample Location:			TP33	TP33	TP34	TP34	TP35	TP35	TP36	TP36	TP05
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.30	1.00	0.30	0.80	0.30	1.00	0.30	0.80	0.30
		Bottom Depth (m):			0.30	1.00	0.30	0.80	0.30	1.00	0.30	0.80	0.30
		Asbestos Lab:			DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10
Benzene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Toluene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Ethylbenzene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
m & p-Xylene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
o-Xylene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Naphthalene	M	2800	mg/kg	0.10	0.44	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.31	< 0.10	0.22
Acenaphthylene	N	2800	mg/kg	0.10	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	0.26	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.48
Fluorene	M	2800	mg/kg	0.10	0.23	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.39
Phenanthrene	M	2800	mg/kg	0.10	2.0	< 0.10	3.0	< 0.10	7.3	< 0.10	0.71	< 0.10	3.8
Anthracene	M	2800	mg/kg	0.10	0.33	< 0.10	0.48	< 0.10	1.0	< 0.10	0.15	< 0.10	0.58
Fluoranthene	M	2800	mg/kg	0.10	2.6	0.15	3.0	< 0.10	6.2	< 0.10	1.0	0.14	4.4
Pyrene	M	2800	mg/kg	0.10	2.4	0.17	2.7	< 0.10	5.5	< 0.10	1.0	0.12	3.8
Benzo[a]anthracene	M	2800	mg/kg	0.10	1.5	< 0.10	1.3	< 0.10	2.4	< 0.10	0.67	< 0.10	2.0
Chrysene	M	2800	mg/kg	0.10	1.6	< 0.10	1.6	< 0.10	2.9	< 0.10	0.83	< 0.10	2.5
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	1.8	< 0.10	1.5	< 0.10	2.9	< 0.10	0.95	< 0.10	2.6
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	0.65	< 0.10	0.45	< 0.10	1.1	< 0.10	0.37	< 0.10	0.84
Benzo[a]pyrene	M	2800	mg/kg	0.10	1.3	< 0.10	1.1	< 0.10	2.0	< 0.10	0.65	< 0.10	1.7
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	0.87	< 0.10	0.64	< 0.10	1.2	< 0.10	0.46	< 0.10	1.2
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.25	< 0.10	0.20	< 0.10	0.37	< 0.10	0.12	< 0.10	0.33
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	0.91	< 0.10	0.75	< 0.10	1.5	< 0.10	0.57	< 0.10	1.2
Coronene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 17 PAH's	N	2800	mg/kg	2.0	17	< 2.0	17	< 2.0	34	< 2.0	7.8	< 2.0	26
PCB 28	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 52	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 90+101	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 118	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 153	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010

Results - Soil

Project: 5811

Client: Site Investigations Ltd			**Chemtest Job No.:**		21-33474	21-33474	21-33474	21-33474	21-33474	21-33474	21-33474	21-33474	21-33476
Quotation No.:			**Chemtest Sample ID.:**		1286930	1286931	1286932	1286933	1286934	1286935	1286936	1286937	1286943
Order No.: 60/A/21			Client Sample Ref.:		ES49	ES50	ES51	ES52	ES53	ES54	ES55	ES56	ES57
			Client Sample ID.:		1	2	1	2	1	2	1	2	1
			Sample Location:		TP33	TP33	TP34	TP34	TP35	TP35	TP36	TP36	TP05
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.30	1.00	0.30	0.80	0.30	1.00	0.30	0.80	0.30
			Bottom Depth (m):		0.30	1.00	0.30	0.80	0.30	1.00	0.30	0.80	0.30
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
PCB 138	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 180	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Total PCBs (7 Congeners)	U	2815	mg/kg	0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: 5811

Client: Site Investigations Ltd				**Chemtest Job No.:**	21-33476	21-33476	21-33476	21-33476	21-33476	21-33476	21-33476	21-33476	21-33476
Quotation No.:				**Chemtest Sample ID.:**	1286944	1286945	1286946	1286947	1286948	1286949	1286950	1286951	1286952
Order No.: 60/A/21				Client Sample Ref.:	ES58	ES59	ES60	ES61	ES62	ES63	ES64	ES65	ES66
				Client Sample ID.:	2	3	1	2	1	2	3	1	2
				Sample Location:	TP05	TP05	TP06	TP06	TP09	TP09	TP09	TP10	TP10
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	0.50	1.00	0.30	1.00	0.30	1.00	1.50	0.30	1.40
				Bottom Depth (m):	0.50	1.00	0.30	1.00	0.30	1.00	1.50	0.30	1.40
				Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	3.6	4.1	8.3	4.5	9.2	3.8	9.5	6.5	6.8
pH	M	2010		4.0	[A] 8.3	[A] 8.2	[A] 8.2	[A] 8.8	[A] 8.3	[A] 8.5	[A] 8.6	[A] 8.5	[A] 8.6
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	[A] 1.1	[A] 1.1	[A] 0.86	[A] < 0.40	[A] 1.0	[A] 0.46	[A] < 0.40	[A] 0.93	[A] 1.0
Sulphur (Elemental)	M	2180	mg/kg	1.0	[A] 8.0	[A] 11	[A] 7.4	[A] 1.5	[A] 1.2	[A] 1.9	[A] < 1.0	[A] 8.8	[A] 18
Cyanide (Total)	M	2300	mg/kg	0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	[A] 4.5	[A] 4.4	[A] 3.9	[A] 6.0	[A] 1.5	[A] 1.2	[A] 7.8	[A] 5.3	[A] 3.0
Sulphate (Total)	M	2430	%	0.010	[A] 0.14	[A] 0.15	[A] 0.13	[A] 0.12	[A] 0.085	[A] 0.14	[A] 0.19	[A] 0.12	[A] 0.15
Arsenic	M	2450	mg/kg	1.0	31	35	31	39	30	28	60	32	46
Barium	M	2450	mg/kg	10	130	150	140	120	120	98	95	160	190
Cadmium	M	2450	mg/kg	0.10	2.7	3.0	2.2	3.4	2.9	2.8	2.7	2.2	2.7
Chromium	M	2450	mg/kg	1.0	32	32	29	23	29	31	29	63	45
Molybdenum	M	2450	mg/kg	2.0	4.9	4.9	3.5	4.9	5.5	4.7	5.0	4.3	5.6
Antimony	N	2450	mg/kg	2.0	2.9	3.0	3.5	2.4	2.9	2.1	4.0	2.8	3.6
Copper	M	2450	mg/kg	0.50	110	100	100	62	75	110	53	120	350
Mercury	M	2450	mg/kg	0.10	0.40	0.66	0.41	0.10	0.41	0.21	0.15	0.56	0.74
Nickel	M	2450	mg/kg	0.50	61	65	48	57	60	59	57	65	68
Lead	M	2450	mg/kg	0.50	130	140	140	48	96	59	220	210	310
Selenium	M	2450	mg/kg	0.20	1.2	0.95	0.76	0.28	0.93	0.53	0.46	0.78	0.75
Zinc	M	2450	mg/kg	0.50	140	140	160	90	150	90	290	200	240
Chromium (Trivalent)	N	2490	mg/kg	1.0	32	32	29	23	29	31	29	63	45
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total Organic Carbon	M	2625	%	0.20	[A] 2.1	[A] 2.9	[A] 3.9	[A] 2.3	[A] 2.5	[A] 1.3	[A] 1.2	[A] 3.1	[A] 2.5
Mineral Oil (TPH Calculation)	N	2670	mg/kg	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0

Results - Soil

Project: 5811

Client: Site Investigations Ltd		**Chemtest Job No.:**			21-33476	21-33476	21-33476	21-33476	21-33476	21-33476	21-33476	21-33476	21-33476
Quotation No.:		**Chemtest Sample ID.:**			1286944	1286945	1286946	1286947	1286948	1286949	1286950	1286951	1286952
Order No.: 60/A/21		Client Sample Ref.:			ES58	ES59	ES60	ES61	ES62	ES63	ES64	ES65	ES66
		Client Sample ID.:			2	3	1	2	1	2	3	1	2
		Sample Location:			TP05	TP05	TP06	TP06	TP09	TP09	TP09	TP10	TP10
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.50	1.00	0.30	1.00	0.30	1.00	1.50	0.30	1.40
		Bottom Depth (m):			0.50	1.00	0.30	1.00	0.30	1.00	1.50	0.30	1.40
		Asbestos Lab:			DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] 29	[A] < 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] 29	[A] < 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] 29	[A] < 10
Benzene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Toluene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Ethylbenzene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
m & p-Xylene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
o-Xylene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Naphthalene	M	2800	mg/kg	0.10	0.17	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.19	0.18
Acenaphthylene	N	2800	mg/kg	0.10	0.11	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.10
Acenaphthene	M	2800	mg/kg	0.10	0.18	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.27	0.39
Fluorene	M	2800	mg/kg	0.10	0.13	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.20	0.19
Phenanthrene	M	2800	mg/kg	0.10	1.1	1.6	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	2.7	2.5
Anthracene	M	2800	mg/kg	0.10	0.27	0.22	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.54	0.74
Fluoranthene	M	2800	mg/kg	0.10	2.1	1.9	0.67	< 0.10	0.15	0.12	< 0.10	4.4	9.4
Pyrene	M	2800	mg/kg	0.10	1.8	1.8	0.55	< 0.10	0.16	0.13	< 0.10	3.9	9.5
Benzo[a]anthracene	M	2800	mg/kg	0.10	0.97	0.93	0.33	< 0.10	< 0.10	< 0.10	< 0.10	2.2	5.3
Chrysene	M	2800	mg/kg	0.10	1.1	1.1	0.40	< 0.10	< 0.10	< 0.10	< 0.10	2.5	5.1
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	1.4	1.5	0.40	< 0.10	< 0.10	< 0.10	< 0.10	3.0	8.6
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	0.49	0.44	0.13	< 0.10	< 0.10	< 0.10	< 0.10	1.1	2.7
Benzo[a]pyrene	M	2800	mg/kg	0.10	0.87	0.95	0.29	< 0.10	< 0.10	< 0.10	< 0.10	2.1	6.9
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	0.62	0.54	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.4	5.1
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.13	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.19	0.79
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	0.69	0.72	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.6	4.6
Coronene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 17 PAH's	N	2800	mg/kg	2.0	12	12	2.8	< 2.0	< 2.0	< 2.0	< 2.0	26	62
PCB 28	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 52	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 90+101	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 118	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 153	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010

Results - Soil

Project: 5811

Client: Site Investigations Ltd			**Chemtest Job No.:**		21-33476	21-33476	21-33476	21-33476	21-33476	21-33476	21-33476	21-33476	21-33476
Quotation No.:			**Chemtest Sample ID.:**		1286944	1286945	1286946	1286947	1286948	1286949	1286950	1286951	1286952
Order No.: 60/A/21			Client Sample Ref.:		ES58	ES59	ES60	ES61	ES62	ES63	ES64	ES65	ES66
			Client Sample ID.:		2	3	1	2	1	2	3	1	2
			Sample Location:		TP05	TP05	TP06	TP06	TP09	TP09	TP09	TP10	TP10
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.50	1.00	0.30	1.00	0.30	1.00	1.50	0.30	1.40
			Bottom Depth (m):		0.50	1.00	0.30	1.00	0.30	1.00	1.50	0.30	1.40
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
PCB 138	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 180	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Total PCBs (7 Congeners)	U	2815	mg/kg	0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: 5811

Client: Site Investigations Ltd				**Chemtest Job No.:**	21-33480	21-33480	21-33480	21-33480	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:				**Chemtest Sample ID.:**	1286961	1286962	1286963	1286964	1287123	1287124	1287125	1287126	1287127
Order No.: 60/A/21				Client Sample Ref.:	ES67	ES68	ES69	ES70	ES1	ES2	ES3	ES4	ES5
				Client Sample ID.:	1	2	1	2	1	2	1	2	1
				Sample Location:	TP11	TP11	TP12	TP12	TP1	TP1	TP2	TP2	TP3
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	0.30	1.00	0.30	1.00	0.30	1.00	0.20	1.40	0.30
				Bottom Depth (m):	0.30	1.00	0.30	1.00	0.30	1.00	0.20	1.40	0.30
				Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	6.5	11	6.6	5.9	7.9	3.9	4.5	6.9	7.2
pH	M	2010		4.0	[A] 8.4	[A] 8.5	[A] 8.2	[A] 8.6	[A] 8.2	[A] 8.3	[A] 8.3	[A] 8.6	[A] 8.4
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	[A] 0.95	[A] 0.44	[A] 1.4	[A] < 0.40	[A] 1.0	[A] 0.98	[A] 1.0	[A] 0.94	[A] 1.4
Sulphur (Elemental)	M	2180	mg/kg	1.0	[A] 5.5	[A] < 1.0	[A] 8.3	[A] 1.9	[A] 6.3	[A] 2.6	[A] 120	[A] 9.1	[A] 9.4
Cyanide (Total)	M	2300	mg/kg	0.50	[A] < 0.50	[A] < 0.50	[A] 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] 0.50	[A] 0.50	[A] < 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	[A] 4.5	[A] 1.6	[A] 2.8	[A] 5.7	[A] 4.5	[A] 4.0	[A] 2.8	[A] 8.1	[A] 3.8
Sulphate (Total)	M	2430	%	0.010	[A] 0.13	[A] 0.037	[A] 0.13	[A] 0.12	[A] 0.14	[A] 0.12	[A] 0.20	[A] 0.32	[A] 0.16
Arsenic	M	2450	mg/kg	1.0	32	16	29	23	28	30	31	25	22
Barium	M	2450	mg/kg	10	150	110	130	79	140	120	210	100	130
Cadmium	M	2450	mg/kg	0.10	2.4	2.0	2.1	2.0	2.0	2.7	1.5	1.2	1.8
Chromium	M	2450	mg/kg	1.0	30	29	32	21	25	31	22	15	23
Molybdenum	M	2450	mg/kg	2.0	5.0	5.0	3.7	3.2	3.5	5.9	4.5	3.9	3.3
Antimony	N	2450	mg/kg	2.0	4.3	< 2.0	2.7	< 2.0	3.3	3.1	3.0	2.0	2.6
Copper	M	2450	mg/kg	0.50	120	37	91	37	89	70	86	36	64
Mercury	M	2450	mg/kg	0.10	0.54	0.14	0.43	0.16	0.72	0.76	0.43	0.20	0.53
Nickel	M	2450	mg/kg	0.50	54	37	54	41	43	57	56	36	39
Lead	M	2450	mg/kg	0.50	240	43	150	79	220	160	410	260	210
Selenium	M	2450	mg/kg	0.20	0.80	0.40	0.96	0.32	0.97	0.66	1.0	0.52	0.93
Zinc	M	2450	mg/kg	0.50	160	120	140	83	190	110	250	81	150
Chromium (Trivalent)	N	2490	mg/kg	1.0	30	29	32	21	25	31	22	15	23
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total Organic Carbon	M	2625	%	0.20	[A] 4.2	[A] 0.84	[A] 4.9	[A] 2.0	[A] 3.5	[A] 2.3	[A] 15	[A] 4.6	[A] 4.5
Mineral Oil (TPH Calculation)	N	2670	mg/kg	10	< 10	< 10	< 10	< 10	11	< 10	< 10	< 10	< 10
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] 11	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] 11	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0

Results - Soil

Project: 5811

Client: Site Investigations Ltd					**Chemtest Job No.:**	21-33480	21-33480	21-33480	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:					**Chemtest Sample ID.:**	1286961	1286962	1286963	1286964	1287123	1287124	1287125	1287126	1287127
Order No.: 60/A/21					Client Sample Ref.:	ES67	ES68	ES69	ES70	ES1	ES2	ES3	ES4	ES5
					Client Sample ID.:	1	2	1	2	1	2	1	2	1
					Sample Location:	TP11	TP11	TP12	TP12	TP1	TP1	TP2	TP2	TP3
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.30	1.00	0.30	1.00	0.30	1.00	0.20	1.40	0.30
					Bottom Depth (m):	0.30	1.00	0.30	1.00	0.30	1.00	0.20	1.40	0.30
					Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] 13	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0		[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] 13	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0		[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] 23	[A] < 10	[A] < 10	[A] < 10	[A] < 10
Benzene	M	2760	µg/kg	1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Toluene	M	2760	µg/kg	1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Ethylbenzene	M	2760	µg/kg	1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
m & p-Xylene	M	2760	µg/kg	1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
o-Xylene	M	2760	µg/kg	1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0		[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Naphthalene	M	2800	mg/kg	0.10		< 0.10	< 0.10	0.23	< 0.10	0.33	< 0.10	< 0.10	0.29	0.74
Acenaphthylene	N	2800	mg/kg	0.10		< 0.10	< 0.10	0.35	< 0.10	0.10	< 0.10	< 0.10	0.13	0.14
Acenaphthene	M	2800	mg/kg	0.10		< 0.10	< 0.10	0.12	< 0.10	0.23	< 0.10	< 0.10	0.84	1.6
Fluorene	M	2800	mg/kg	0.10		< 0.10	< 0.10	0.19	< 0.10	0.19	< 0.10	< 0.10	0.62	1.2
Phenanthrene	M	2800	mg/kg	0.10		0.78	< 0.10	2.8	< 0.10	2.0	< 0.10	< 0.10	5.6	11
Anthracene	M	2800	mg/kg	0.10		0.14	< 0.10	0.64	< 0.10	0.30	< 0.10	< 0.10	1.5	1.6
Fluoranthene	M	2800	mg/kg	0.10		1.2	< 0.10	4.1	0.23	2.6	0.12	0.50	7.5	11
Pyrene	M	2800	mg/kg	0.10		1.1	< 0.10	3.2	0.26	2.3	0.11	0.43	6.1	9.1
Benzo[a]anthracene	M	2800	mg/kg	0.10		0.56	< 0.10	1.8	0.13	1.3	< 0.10	< 0.10	2.5	4.1
Chrysene	M	2800	mg/kg	0.10		0.63	< 0.10	1.8	0.18	1.4	< 0.10	< 0.10	2.3	4.2
Benzo[b]fluoranthene	M	2800	mg/kg	0.10		0.85	< 0.10	2.2	0.29	1.8	< 0.10	< 0.10	2.7	5.0
Benzo[k]fluoranthene	M	2800	mg/kg	0.10		0.19	< 0.10	0.70	0.10	0.56	< 0.10	< 0.10	0.90	1.7
Benzo[a]pyrene	M	2800	mg/kg	0.10		0.59	< 0.10	1.5	0.22	1.2	< 0.10	< 0.10	2.2	3.5
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10		0.33	< 0.10	1.1	< 0.10	0.79	< 0.10	< 0.10	2.2	2.6
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10		0.13	< 0.10	0.24	< 0.10	0.21	< 0.10	< 0.10	1.4	0.75
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10		0.44	< 0.10	1.0	< 0.10	0.86	< 0.10	< 0.10	0.26	2.7
Coronene	N	2800	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.3	< 0.10
Total Of 17 PAH's	N	2800	mg/kg	2.0		6.9	< 2.0	22	< 2.0	16	< 2.0	< 2.0	38	61
PCB 28	U	2815	mg/kg	0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 52	U	2815	mg/kg	0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 90+101	U	2815	mg/kg	0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 118	U	2815	mg/kg	0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 153	U	2815	mg/kg	0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010

Results - Soil

Project: 5811

Client: Site Investigations Ltd					**Chemtest Job No.:**	21-33480	21-33480	21-33480	21-33480	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:					**Chemtest Sample ID.:**	1286961	1286962	1286963	1286964	1287123	1287124	1287125	1287126	1287127
Order No.: 60/A/21					Client Sample Ref.:	ES67	ES68	ES69	ES70	ES1	ES2	ES3	ES4	ES5
					Client Sample ID.:	1	2	1	2	1	2	1	2	1
					Sample Location:	TP11	TP11	TP12	TP12	TP1	TP1	TP2	TP2	TP3
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.30	1.00	0.30	1.00	0.30	1.00	0.20	1.40	0.30
					Bottom Depth (m):	0.30	1.00	0.30	1.00	0.30	1.00	0.20	1.40	0.30
					Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
PCB 138	U	2815	mg/kg	0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 180	U	2815	mg/kg	0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Total PCBs (7 Congeners)	U	2815	mg/kg	0.10		[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10
Total Phenols	M	2920	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: 5811

Client: Site Investigations Ltd			**Chemtest Job No.:**		21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:			**Chemtest Sample ID.:**		1287128	1287129	1287130	1287131	1287132	1287133	1287134	1287135	1287136
Order No.: 60/A/21			Client Sample Ref.:		ES6	ES7	ES8	ES9	ES10	ES11	ES12	ES13	ES14
			Client Sample ID.:		2	1	2	1	2	1	2	1	2
			Sample Location:		TP3	TP4	TP4	TP7	TP7	TP8	TP8	TP13	TP13
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.20	0.40	1.50	0.30	1.00	0.30	1.00	0.30	1.00
			Bottom Depth (m):		1.20	0.40	1.50	0.30	1.00	0.30	1.00	0.30	1.00
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	6.8	3.6	2.9	7.4	8.2	8.4	12	5.1	2.4
pH	M	2010		4.0	[A] 8.4	[A] 8.5	[A] 8.6	[A] 8.3	[A] 8.6	[A] 8.3	[A] 8.4	[A] 8.6	[A] 8.8
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	[A] 0.99	[A] 0.45	[A] 0.65	[A] 1.2	[A] 0.58	[A] 1.5	[A] 0.73	[A] 0.92	[A] < 0.40
Sulphur (Elemental)	M	2180	mg/kg	1.0	[A] 19	[A] 4.0	[A] 1.8	[A] 5.1	[A] 1.8	[A] 12	[A] < 1.0	[A] < 1.0	[A] < 1.0
Cyanide (Total)	M	2300	mg/kg	0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] 0.70
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	[A] 4.5	[A] 10	[A] 3.5	[A] 3.2	[A] 3.3	[A] 1.4	[A] 44	[A] 9.8	[A] 2.2
Sulphate (Total)	M	2430	%	0.010	[A] 0.13	[A] 0.24	[A] 0.21	[A] 0.18	[A] 0.073	[A] 0.16	[A] 0.060	[A] 0.12	[A] 0.13
Arsenic	M	2450	mg/kg	1.0	21	25	24	20	17	30	12	25	17
Barium	M	2450	mg/kg	10	110	150	94	110	67	190	56	60	84
Cadmium	M	2450	mg/kg	0.10	1.1	2.3	2.0	1.6	1.6	1.3	1.0	2.4	1.2
Chromium	M	2450	mg/kg	1.0	16	23	19	19	19	21	20	19	19
Molybdenum	M	2450	mg/kg	2.0	3.5	4.7	3.8	2.6	3.5	5.0	< 2.0	3.8	2.8
Antimony	N	2450	mg/kg	2.0	2.0	2.5	2.0	< 2.0	2.0	4.6	< 2.0	2.0	2.2
Copper	M	2450	mg/kg	0.50	61	63	85	130	53	110	34	50	54
Mercury	M	2450	mg/kg	0.10	0.36	0.33	0.19	0.40	0.26	0.84	0.25	0.13	0.71
Nickel	M	2450	mg/kg	0.50	34	54	41	35	36	48	29	44	32
Lead	M	2450	mg/kg	0.50	150	130	93	180	77	450	29	40	190
Selenium	M	2450	mg/kg	0.20	0.61	1.3	0.87	0.90	0.61	0.69	< 0.20	0.24	0.68
Zinc	M	2450	mg/kg	0.50	120	130	110	150	100	210	66	73	130
Chromium (Trivalent)	N	2490	mg/kg	1.0	16	23	19	19	19	21	20	19	19
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total Organic Carbon	M	2625	%	0.20	[A] 4.9	[A] 5.4	[A] 1.5	[A] 4.0	[A] 1.5	[A] 6.6	[A] 1.8	[A] 1.8	[A] 2.4
Mineral Oil (TPH Calculation)	N	2670	mg/kg	10	80	< 10	< 10	17	56	< 10	10	14	< 10
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	[A] 80	[A] < 1.0	[A] < 1.0	[A] 17	[A] 56	[A] < 1.0	[A] < 1.0	[A] 14	[A] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[A] 80	[A] < 5.0	[A] < 5.0	[A] 17	[A] 56	[A] < 5.0	[A] < 5.0	[A] 14	[A] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0

Results - Soil

Project: 5811

Client: Site Investigations Ltd		**Chemtest Job No.:**			21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:		**Chemtest Sample ID.:**			1287128	1287129	1287130	1287131	1287132	1287133	1287134	1287135	1287136
Order No.: 60/A/21		Client Sample Ref.:			ES6	ES7	ES8	ES9	ES10	ES11	ES12	ES13	ES14
		Client Sample ID.:			2	1	2	1	2	1	2	1	2
		Sample Location:			TP3	TP4	TP4	TP7	TP7	TP8	TP8	TP13	TP13
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			1.20	0.40	1.50	0.30	1.00	0.30	1.00	0.30	1.00
		Bottom Depth (m):			1.20	0.40	1.50	0.30	1.00	0.30	1.00	0.30	1.00
		Asbestos Lab:			COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	[A] 77	[A] < 1.0	[A] < 1.0	[A] 71	[A] 42	[A] < 1.0	[A] < 1.0	[A] 110	[A] < 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[A] 77	[A] < 5.0	[A] < 5.0	[A] 71	[A] 42	[A] < 5.0	[A] < 5.0	[A] 110	[A] < 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[A] 160	[A] < 10	[A] < 10	[A] 88	[A] 98	[A] < 10	[A] < 10	[A] 130	[A] < 10
Benzene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Toluene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Ethylbenzene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
m & p-Xylene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
o-Xylene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Naphthalene	M	2800	mg/kg	0.10	0.30	< 0.10	< 0.10	< 0.10	< 0.10	0.16	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	0.68	< 0.10	< 0.10	< 0.10	< 0.10	0.11	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	0.59	< 0.10	< 0.10	< 0.10	< 0.10	0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	1.0	< 0.10	< 0.10	< 0.10	< 0.10	0.12	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	11	< 0.10	< 0.10	1.0	< 0.10	1.1	< 0.10	< 0.10	< 0.10
Anthracene	M	2800	mg/kg	0.10	1.9	< 0.10	< 0.10	0.18	< 0.10	0.39	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2800	mg/kg	0.10	16	0.42	0.34	1.7	0.14	1.8	< 0.10	< 0.10	< 0.10
Pyrene	M	2800	mg/kg	0.10	13	0.42	0.36	1.5	0.13	1.7	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	M	2800	mg/kg	0.10	6.2	0.30	0.19	0.80	< 0.10	1.0	< 0.10	< 0.10	< 0.10
Chrysene	M	2800	mg/kg	0.10	6.2	0.32	0.23	0.89	< 0.10	1.1	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	6.8	0.38	< 0.10	0.95	< 0.10	1.3	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	2.5	0.16	< 0.10	0.42	< 0.10	0.46	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2800	mg/kg	0.10	5.5	0.20	< 0.10	0.76	< 0.10	1.1	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	3.3	< 0.10	< 0.10	0.48	< 0.10	0.65	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.74	< 0.10	< 0.10	0.17	< 0.10	0.26	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	3.0	< 0.10	< 0.10	0.43	< 0.10	0.64	< 0.10	< 0.10	< 0.10
Coronene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 17 PAH's	N	2800	mg/kg	2.0	79	2.2	< 2.0	9.3	< 2.0	12	< 2.0	< 2.0	< 2.0
PCB 28	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 52	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 90+101	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 118	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 153	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010

Results - Soil

Project: 5811

Client: Site Investigations Ltd					**Chemtest Job No.:**	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:					**Chemtest Sample ID.:**	1287128	1287129	1287130	1287131	1287132	1287133	1287134	1287135	1287136
Order No.: 60/A/21					Client Sample Ref.:	ES6	ES7	ES8	ES9	ES10	ES11	ES12	ES13	ES14
					Client Sample ID.:	2	1	2	1	2	1	2	1	2
					Sample Location:	TP3	TP4	TP4	TP7	TP7	TP8	TP8	TP13	TP13
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	1.20	0.40	1.50	0.30	1.00	0.30	1.00	0.30	1.00
					Bottom Depth (m):	1.20	0.40	1.50	0.30	1.00	0.30	1.00	0.30	1.00
					Asbestos Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
PCB 138	U	2815	mg/kg	0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 180	U	2815	mg/kg	0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Total PCBs (7 Congeners)	U	2815	mg/kg	0.10		[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10
Total Phenols	M	2920	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: 5811

Client: Site Investigations Ltd			**Chemtest Job No.:**		21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:			**Chemtest Sample ID.:**		1287137	1287138	1287139	1287140	1287141	1287142	1287143	1287144	1287145
Order No.: 60/A/21			Client Sample Ref.:		ES15	ES16	ES17	ES18	ES19	ES20	ES21	ES22	ES23
			Client Sample ID.:		1	2	1	2	1	2	1	2	1
			Sample Location:		TP14	TP14	TP15	TP15	TP16	TP16	TP17	TP17	TP18
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.30	1.00	0.30	1.00	0.30	0.60	0.30	0.60	0.30
			Bottom Depth (m):		0.30	1.00	0.30	1.00	0.30	0.60	0.30	0.60	0.30
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	9.1	2.5	7.2	8.3	10	9.7	7.7	6.7	8.9
pH	M	2010		4.0	[A] 8.6	[A] 8.7	[A] 8.4	[A] 8.6	[A] 8.2	[A] 8.6	[A] 8.3	[A] 8.3	[A] 8.2
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	[A] 1.4	[A] 0.52	[A] 1.1	[A] 0.53	[A] 0.70	[A] 0.88	[A] 1.8	[A] 0.43	[A] 1.7
Sulphur (Elemental)	M	2180	mg/kg	1.0	[A] 7.6	[A] < 1.0	[A] 5.3	[A] < 1.0	[A] 7.2	[A] < 1.0	[A] 10	[A] < 1.0	[A] 7.0
Cyanide (Total)	M	2300	mg/kg	0.50	[A] < 0.50	[A] < 0.50	[A] 8.3	[A] 10	[A] 7.9	[A] 18	[A] 1.2	[A] < 0.50	[A] < 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	[A] 8.8	[A] 6.2	[A] 1.9	[A] 1.8	[A] 2.1	[A] 1.8	[A] 1.5	[A] 1.6	[A] 1.7
Sulphate (Total)	M	2430	%	0.010	[A] 0.15	[A] 0.075	[A] 0.081	[A] 0.020	[A] 0.13	[A] 0.031	[A] 0.096	[A] 0.020	[A] 0.091
Arsenic	M	2450	mg/kg	1.0	22	16	19	9.8	17	10	22	15	24
Barium	M	2450	mg/kg	10	76	70	87	43	85	57	87	63	110
Cadmium	M	2450	mg/kg	0.10	1.6	1.2	1.6	0.83	1.1	1.3	1.1	1.4	1.3
Chromium	M	2450	mg/kg	1.0	18	16	20	18	17	15	18	29	24
Molybdenum	M	2450	mg/kg	2.0	2.6	2.3	2.7	2.9	2.4	2.4	2.7	2.7	3.3
Antimony	N	2450	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	2.0	< 2.0	3.1
Copper	M	2450	mg/kg	0.50	46	67	85	110	110	58	110	58	72
Mercury	M	2450	mg/kg	0.10	0.16	0.26	0.28	< 0.10	0.54	0.12	0.57	0.16	0.51
Nickel	M	2450	mg/kg	0.50	34	28	33	26	29	25	34	44	40
Lead	M	2450	mg/kg	0.50	46	97	110	31	180	36	160	37	180
Selenium	M	2450	mg/kg	0.20	0.37	0.48	0.67	0.53	0.73	0.34	0.47	0.34	0.55
Zinc	M	2450	mg/kg	0.50	55	95	120	70	120	74	120	88	200
Chromium (Trivalent)	N	2490	mg/kg	1.0	18	16	20	18	17	15	18	29	24
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total Organic Carbon	M	2625	%	0.20	[A] 3.7	[A] 1.1	[A] 3.0	[A] 0.68	[A] 4.7	[A] 1.1	[A] 3.0	[A] 0.76	[A] 3.6
Mineral Oil (TPH Calculation)	N	2670	mg/kg	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0

Results - Soil

Project: 5811

Client: Site Investigations Ltd		**Chemtest Job No.:**			21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:		**Chemtest Sample ID.:**			1287137	1287138	1287139	1287140	1287141	1287142	1287143	1287144	1287145
Order No.: 60/A/21		Client Sample Ref.:			ES15	ES16	ES17	ES18	ES19	ES20	ES21	ES22	ES23
		Client Sample ID.:			1	2	1	2	1	2	1	2	1
		Sample Location:			TP14	TP14	TP15	TP15	TP16	TP16	TP17	TP17	TP18
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.30	1.00	0.30	1.00	0.30	0.60	0.30	0.60	0.30
		Bottom Depth (m):			0.30	1.00	0.30	1.00	0.30	0.60	0.30	0.60	0.30
		Asbestos Lab:			COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	[A] 18	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] 17
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[A] 15	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] 67
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	[A] 45	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] 350
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[A] 79	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] 430
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[A] 79	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] 430
Benzene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Toluene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Ethylbenzene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
m & p-Xylene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
o-Xylene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Naphthalene	M	2800	mg/kg	0.10	0.27	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	0.52	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	0.52	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	4.0	< 0.10	0.52	< 0.10	0.83	< 0.10	3.4	< 0.10	3.0
Anthracene	M	2800	mg/kg	0.10	0.68	< 0.10	0.50	< 0.10	0.17	< 0.10	0.50	< 0.10	0.44
Fluoranthene	M	2800	mg/kg	0.10	4.0	0.13	1.7	< 0.10	1.0	< 0.10	4.2	< 0.10	3.7
Pyrene	M	2800	mg/kg	0.10	3.2	0.12	1.7	< 0.10	0.95	< 0.10	3.6	< 0.10	3.1
Benzo[a]anthracene	M	2800	mg/kg	0.10	1.8	< 0.10	1.3	< 0.10	0.58	< 0.10	1.8	< 0.10	1.6
Chrysene	M	2800	mg/kg	0.10	2.0	< 0.10	1.2	< 0.10	0.63	< 0.10	1.9	< 0.10	1.8
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	2.0	< 0.10	1.4	< 0.10	0.72	< 0.10	1.9	< 0.10	2.0
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	0.65	< 0.10	0.61	< 0.10	0.21	< 0.10	0.67	< 0.10	0.63
Benzo[a]pyrene	M	2800	mg/kg	0.10	1.7	< 0.10	1.1	< 0.10	0.63	< 0.10	1.4	< 0.10	1.5
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	0.97	< 0.10	0.70	< 0.10	< 0.10	< 0.10	0.87	< 0.10	0.87
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.26	< 0.10	0.14	< 0.10	< 0.10	< 0.10	0.24	< 0.10	0.36
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	0.93	< 0.10	0.68	< 0.10	< 0.10	< 0.10	1.2	< 0.10	0.96
Coronene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 17 PAH's	N	2800	mg/kg	2.0	24	< 2.0	12	< 2.0	5.7	< 2.0	22	< 2.0	20
PCB 28	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 52	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 90+101	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 118	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 153	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010

Results - Soil

Project: 5811

Client: Site Investigations Ltd					**Chemtest Job No.:**	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:					**Chemtest Sample ID.:**	1287137	1287138	1287139	1287140	1287141	1287142	1287143	1287144	1287145
Order No.: 60/A/21					Client Sample Ref.:	ES15	ES16	ES17	ES18	ES19	ES20	ES21	ES22	ES23
					Client Sample ID.:	1	2	1	2	1	2	1	2	1
					Sample Location:	TP14	TP14	TP15	TP15	TP16	TP16	TP17	TP17	TP18
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.30	1.00	0.30	1.00	0.30	0.60	0.30	0.60	0.30
					Bottom Depth (m):	0.30	1.00	0.30	1.00	0.30	0.60	0.30	0.60	0.30
					Asbestos Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
PCB 138	U	2815	mg/kg	0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 180	U	2815	mg/kg	0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Total PCBs (7 Congeners)	U	2815	mg/kg	0.10		[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10
Total Phenols	M	2920	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: 5811

Client: Site Investigations Ltd		**Chemtest Job No.:**			21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:		**Chemtest Sample ID.:**			1287146	1287147	1287148	1287149	1287150	1287151	1287152	1287153	1287154
Order No.: 60/A/21		Client Sample Ref.:			ES24	ES25	ES26	ES27	ES28	ES29	ES30	ES31	ES32
		Client Sample ID.:			2	1	2	1	2	1	2	1	2
		Sample Location:			TP18	TP19	TP19	TP20	TP20	TP22	TP22	TP23	TP23
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			1.00	0.30	0.80	0.40	0.80	0.30	1.00	0.30	0.80
		Bottom Depth (m):			1.00	0.30	0.80	0.40	0.80	0.30	1.00	0.30	0.80
		Asbestos Lab:			COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	6.7	9.1	13	6.3	14	8.1	6.9	8.1	17
pH	M	2010		4.0	[A] 8.6	[A] 8.3	[A] 8.6	[A] 8.5	[A] 8.4	[A] 8.7	[A] 8.3	[A] 8.2	[A] 8.5
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	[A] < 0.40	[A] 2.2	[A] 0.52	[A] < 0.40	[A] 0.68	[A] 1.8	[A] < 0.40	[A] 2.6	[A] 0.72
Sulphur (Elemental)	M	2180	mg/kg	1.0	[A] < 1.0	[A] 8.7	[A] 2.4	[A] 2.7	[A] < 1.0	[A] 8.2	[A] < 1.0	[A] 12	[A] 1.5
Cyanide (Total)	M	2300	mg/kg	0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	[A] 7.2	[A] 2.1	[A] 5.3	[A] 2.6	[A] 3.3	[A] 3.1	[A] 8.8	[A] 3.5	[A] 1.6
Sulphate (Total)	M	2430	%	0.010	[A] 0.075	[A] 0.11	[A] 0.093	[A] 0.12	[A] 0.055	[A] 0.20	[A] 0.11	[A] 0.16	[A] 0.070
Arsenic	M	2450	mg/kg	1.0	22	31	15	41	13	49	23	24	12
Barium	M	2450	mg/kg	10	68	140	51	86	55	190	78	120	68
Cadmium	M	2450	mg/kg	0.10	2.9	1.4	1.4	1.5	1.0	1.8	1.7	1.1	1.3
Chromium	M	2450	mg/kg	1.0	21	23	17	23	21	25	22	17	21
Molybdenum	M	2450	mg/kg	2.0	4.0	3.7	3.6	3.0	< 2.0	5.9	3.0	3.1	3.1
Antimony	N	2450	mg/kg	2.0	2.6	3.9	2.8	2.2	< 2.0	5.2	< 2.0	2.3	< 2.0
Copper	M	2450	mg/kg	0.50	66	92	56	63	37	160	52	94	47
Mercury	M	2450	mg/kg	0.10	0.12	0.82	0.15	0.47	0.25	0.93	< 0.10	0.60	0.14
Nickel	M	2450	mg/kg	0.50	61	46	36	42	32	62	46	38	36
Lead	M	2450	mg/kg	0.50	36	260	40	140	28	360	36	460	35
Selenium	M	2450	mg/kg	0.20	0.27	0.49	0.35	0.51	< 0.20	0.73	< 0.20	0.84	0.31
Zinc	M	2450	mg/kg	0.50	94	260	75	120	75	370	63	170	90
Chromium (Trivalent)	N	2490	mg/kg	1.0	21	23	17	23	21	25	22	17	21
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total Organic Carbon	M	2625	%	0.20	[A] 0.37	[A] 4.7	[A] 3.9	[A] 1.4	[A] 1.1	[A] 6.0	[A] 1.4	[A] 7.2	[A] 1.4
Mineral Oil (TPH Calculation)	N	2670	mg/kg	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0

Results - Soil

Project: 5811

Client: Site Investigations Ltd		**Chemtest Job No.:**			21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:		**Chemtest Sample ID.:**			1287146	1287147	1287148	1287149	1287150	1287151	1287152	1287153	1287154
Order No.: 60/A/21		Client Sample Ref.:			ES24	ES25	ES26	ES27	ES28	ES29	ES30	ES31	ES32
		Client Sample ID.:			2	1	2	1	2	1	2	1	2
		Sample Location:			TP18	TP19	TP19	TP20	TP20	TP22	TP22	TP23	TP23
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			1.00	0.30	0.80	0.40	0.80	0.30	1.00	0.30	0.80
		Bottom Depth (m):			1.00	0.30	0.80	0.40	0.80	0.30	1.00	0.30	0.80
		Asbestos Lab:			COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] 27	[A] < 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] 8.5	[A] < 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] 68	[A] < 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] 100	[A] < 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] 100	[A] < 10
Benzene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Toluene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Ethylbenzene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
m & p-Xylene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
o-Xylene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.19	< 0.10	0.19	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.11	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.15	< 0.10	0.39	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.12	< 0.10	0.28	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	< 0.10	1.5	< 0.10	< 0.10	< 0.10	1.4	< 0.10	3.6	< 0.10
Anthracene	M	2800	mg/kg	0.10	< 0.10	0.24	< 0.10	< 0.10	< 0.10	0.22	< 0.10	0.44	< 0.10
Fluoranthene	M	2800	mg/kg	0.10	0.26	1.8	0.26	< 0.10	< 0.10	1.8	< 0.10	4.9	0.50
Pyrene	M	2800	mg/kg	0.10	0.24	1.6	0.24	< 0.10	< 0.10	1.7	< 0.10	4.3	0.41
Benzo[a]anthracene	M	2800	mg/kg	0.10	< 0.10	0.83	0.14	< 0.10	< 0.10	0.93	< 0.10	2.1	0.19
Chrysene	M	2800	mg/kg	0.10	< 0.10	0.96	0.15	< 0.10	< 0.10	1.0	< 0.10	2.4	0.13
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	< 0.10	1.0	< 0.10	< 0.10	< 0.10	1.2	< 0.10	2.7	< 0.10
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	< 0.10	0.45	< 0.10	< 0.10	< 0.10	0.38	< 0.10	0.88	< 0.10
Benzo[a]pyrene	M	2800	mg/kg	0.10	< 0.10	0.89	< 0.10	< 0.10	< 0.10	0.88	< 0.10	2.0	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	< 0.10	0.58	< 0.10	< 0.10	< 0.10	0.56	< 0.10	1.3	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10	0.24	< 0.10	< 0.10	< 0.10	0.18	< 0.10	0.31	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	< 0.10	0.62	< 0.10	< 0.10	< 0.10	0.61	< 0.10	1.4	< 0.10
Coronene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 17 PAH's	N	2800	mg/kg	2.0	< 2.0	11	< 2.0	< 2.0	< 2.0	11	< 2.0	27	< 2.0
PCB 28	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 52	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 90+101	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 118	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 153	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010

Results - Soil

Project: 5811

Client: Site Investigations Ltd			**Chemtest Job No.:**		21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:			**Chemtest Sample ID.:**		1287146	1287147	1287148	1287149	1287150	1287151	1287152	1287153	1287154
Order No.: 60/A/21			Client Sample Ref.:		ES24	ES25	ES26	ES27	ES28	ES29	ES30	ES31	ES32
			Client Sample ID.:		2	1	2	1	2	1	2	1	2
			Sample Location:		TP18	TP19	TP19	TP20	TP20	TP22	TP22	TP23	TP23
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.00	0.30	0.80	0.40	0.80	0.30	1.00	0.30	0.80
			Bottom Depth (m):		1.00	0.30	0.80	0.40	0.80	0.30	1.00	0.30	0.80
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
PCB 138	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 180	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Total PCBs (7 Congeners)	U	2815	mg/kg	0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: 5811

Client: Site Investigations Ltd				**Chemtest Job No.:**	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:				**Chemtest Sample ID.:**	1287155	1287156	1287157	1287158	1287159	1287160	1287161	1287162	1287163
Order No.: 60/A/21				Client Sample Ref.:	ES33	ES34	ES35	ES36	ES37	ES38	ES39	ES40	ES41
				Client Sample ID.:	1	2	1	2	1	2	1	2	1
				Sample Location:	TP24	TP24	TP25	TP25	TP26	TP26	TP27	TP27	TP28
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	0.30	1.00	0.30	1.00	0.30	1.20	0.30	1.00	0.20
				Bottom Depth (m):	0.30	1.00	0.30	1.00	0.30	1.20	0.30	1.00	0.30
				Asbestos Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	8.0	5.0	3.5	4.4	6.2	9.3	20	17	8.0
pH	M	2010		4.0	[A] 8.5	[A] 8.4	[A] 8.7	[A] 8.5	[A] 8.6	[A] 8.5	[A] 8.4	[A] 8.4	[A] 8.5
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	[A] 2.0	[A] 1.2	[A] < 0.40	[A] < 0.40	[A] 0.83	[A] 1.5	[A] 1.6	[A] 0.43	[A] 0.68
Sulphur (Elemental)	M	2180	mg/kg	1.0	[A] 5.8	[A] 11	[A] 11	[A] 1.5	[A] 4.0	[A] 3.0	[A] 4.8	[A] 2.2	[A] 4.9
Cyanide (Total)	M	2300	mg/kg	0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	[A] 3.3	[A] 5.9	[A] 3.9	[A] 4.4	[A] 7.3	[A] 4.1	[A] 2.7	[A] 6.4	[A] 3.8
Sulphate (Total)	M	2430	%	0.010	[A] 0.18	[A] 0.13	[A] 0.20	[A] 0.11	[A] 0.23	[A] 0.082	[A] 0.032	[A] 0.033	[A] 0.14
Arsenic	M	2450	mg/kg	1.0	31	19	29	26	25	13	20	11	25
Barium	M	2450	mg/kg	10	160	73	150	76	98	73	76	41	120
Cadmium	M	2450	mg/kg	0.10	1.8	1.1	1.5	1.6	1.4	1.0	1.1	0.88	1.3
Chromium	M	2450	mg/kg	1.0	20	17	26	27	19	17	22	15	23
Molybdenum	M	2450	mg/kg	2.0	3.9	2.9	4.0	3.8	2.9	2.5	3.5	3.0	3.2
Antimony	N	2450	mg/kg	2.0	5.4	2.6	3.1	2.3	< 2.0	< 2.0	2.5	< 2.0	2.4
Copper	M	2450	mg/kg	0.50	82	56	130	74	85	38	71	23	110
Mercury	M	2450	mg/kg	0.10	0.48	0.32	0.83	0.32	0.40	0.26	0.63	< 0.10	0.62
Nickel	M	2450	mg/kg	0.50	44	30	52	47	36	26	37	26	44
Lead	M	2450	mg/kg	0.50	260	110	280	84	200	57	120	18	160
Selenium	M	2450	mg/kg	0.20	0.98	0.48	0.80	0.35	0.34	0.26	0.50	< 0.20	0.51
Zinc	M	2450	mg/kg	0.50	310	110	210	140	110	64	100	58	130
Chromium (Trivalent)	N	2490	mg/kg	1.0	20	17	26	27	19	17	22	15	23
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total Organic Carbon	M	2625	%	0.20	[A] 5.4	[A] 3.7	[A] 6.3	[A] 2.7	[A] 2.8	[A] 2.6	[A] 3.1	[A] 0.40	[A] 3.9
Mineral Oil (TPH Calculation)	N	2670	mg/kg	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0

Results - Soil

Project: 5811

Client: Site Investigations Ltd		**Chemtest Job No.:**			21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:		**Chemtest Sample ID.:**			1287155	1287156	1287157	1287158	1287159	1287160	1287161	1287162	1287163
Order No.: 60/A/21		Client Sample Ref.:			ES33	ES34	ES35	ES36	ES37	ES38	ES39	ES40	ES41
		Client Sample ID.:			1	2	1	2	1	2	1	2	1
		Sample Location:			TP24	TP24	TP25	TP25	TP26	TP26	TP27	TP27	TP28
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.30	1.00	0.30	1.00	0.30	1.20	0.30	1.00	0.20
		Bottom Depth (m):			0.30	1.00	0.30	1.00	0.30	1.20	0.30	1.00	0.30
		Asbestos Lab:			COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[A] < 1.0	[A] 20	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[A] < 5.0	[A] 20	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[A] < 10	[A] 20	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10
Benzene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Toluene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Ethylbenzene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
m & p-Xylene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
o-Xylene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10	0.14	0.32	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.27
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	0.12	0.14	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	0.75	0.17	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.42
Fluorene	M	2800	mg/kg	0.10	< 0.10	0.60	0.12	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.28
Phenanthrene	M	2800	mg/kg	0.10	1.2	7.4	1.7	< 0.10	0.33	0.21	< 0.10	< 0.10	3.6
Anthracene	M	2800	mg/kg	0.10	0.25	2.3	0.49	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.48
Fluoranthene	M	2800	mg/kg	0.10	1.7	11	3.4	0.27	0.40	0.24	0.12	< 0.10	3.7
Pyrene	M	2800	mg/kg	0.10	1.4	8.9	2.8	0.20	0.37	0.22	0.10	< 0.10	3.4
Benzo[a]anthracene	M	2800	mg/kg	0.10	0.81	4.7	1.7	0.12	0.18	0.13	< 0.10	< 0.10	1.5
Chrysene	M	2800	mg/kg	0.10	0.87	4.4	1.6	0.14	0.29	0.17	< 0.10	< 0.10	1.8
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	1.1	5.0	2.2	< 0.10	0.29	< 0.10	< 0.10	< 0.10	2.0
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	0.34	1.8	0.82	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.62
Benzo[a]pyrene	M	2800	mg/kg	0.10	0.74	4.1	1.7	< 0.10	0.22	< 0.10	< 0.10	< 0.10	1.4
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	0.53	2.6	1.0	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.80
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.12	0.52	0.28	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.25
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	0.50	2.2	1.2	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.1
Coronene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 17 PAH's	N	2800	mg/kg	2.0	9.6	57	20	< 2.0	2.1	< 2.0	< 2.0	< 2.0	22
PCB 28	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 52	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 90+101	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 118	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 153	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010

Results - Soil

Project: 5811

Client: Site Investigations Ltd			**Chemtest Job No.:**		21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:			**Chemtest Sample ID.:**		1287155	1287156	1287157	1287158	1287159	1287160	1287161	1287162	1287163
Order No.: 60/A/21			Client Sample Ref.:		ES33	ES34	ES35	ES36	ES37	ES38	ES39	ES40	ES41
			Client Sample ID.:		1	2	1	2	1	2	1	2	1
			Sample Location:		TP24	TP24	TP25	TP25	TP26	TP26	TP27	TP27	TP28
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.30	1.00	0.30	1.00	0.30	1.20	0.30	1.00	0.20
			Bottom Depth (m):		0.30	1.00	0.30	1.00	0.30	1.20	0.30	1.00	0.30
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
PCB 138	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 180	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Total PCBs (7 Congeners)	U	2815	mg/kg	0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: 5811

Client: Site Investigations Ltd			**Chemtest Job No.:**		21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:			**Chemtest Sample ID.:**		1287164	1287165	1287166	1287167	1287168	1287169	1287170
Order No.: 60/A/21			Client Sample Ref.:		ES42	ES43	ES44	ES45	ES46	ES47	ES48
			Client Sample ID.:		2	1	2	1	2	1	2
			Sample Location:		TP28	TP30	TP30	TP31	TP31	TP32	TP32
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.00	0.30	0.90	0.30	1.50	0.30	1.00
			Bottom Depth (m):		1.00	0.30	0.90	0.30	1.50	0.30	1.00
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type	U	2192		N/A	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	9.1	8.1	10	8.7	12	10	11
pH	M	2010		4.0	[A] 8.7	[A] 8.4	[A] 8.6	[A] 8.3	[A] 8.5	[A] 8.4	[A] 8.7
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	[A] < 0.40	[A] 1.6	[A] 0.40	[A] 1.9	[A] 0.52	[A] 1.9	[A] < 0.40
Sulphur (Elemental)	M	2180	mg/kg	1.0	[A] 3.0	[A] 5.7	[A] 1.5	[A] 7.6	[A] < 1.0	[A] 7.1	[A] < 1.0
Cyanide (Total)	M	2300	mg/kg	0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	[A] 10	[A] 2.2	[A] 11	[A] 2.3	[A] 1.7	[A] 3.4	[A] 10
Sulphate (Total)	M	2430	%	0.010	[A] 0.095	[A] 0.18	[A] 0.059	[A] 0.17	[A] 0.029	[A] 0.15	[A] 0.11
Arsenic	M	2450	mg/kg	1.0	19	28	14	18	8.9	43	27
Barium	M	2450	mg/kg	10	74	130	68	90	53	160	97
Cadmium	M	2450	mg/kg	0.10	2.6	1.6	1.6	1.1	0.83	1.6	2.9
Chromium	M	2450	mg/kg	1.0	19	24	17	16	23	39	26
Molybdenum	M	2450	mg/kg	2.0	4.1	3.3	2.2	2.4	2.6	4.9	5.2
Antimony	N	2450	mg/kg	2.0	2.0	2.5	< 2.0	< 2.0	< 2.0	3.9	2.5
Copper	M	2450	mg/kg	0.50	44	110	36	69	17	110	61
Mercury	M	2450	mg/kg	0.10	0.11	0.66	0.15	0.46	0.13	0.87	0.18
Nickel	M	2450	mg/kg	0.50	54	44	36	32	24	65	65
Lead	M	2450	mg/kg	0.50	29	250	41	150	28	760	52
Selenium	M	2450	mg/kg	0.20	0.28	0.76	< 0.20	0.50	< 0.20	0.62	0.42
Zinc	M	2450	mg/kg	0.50	76	180	67	130	91	210	97
Chromium (Trivalent)	N	2490	mg/kg	1.0	19	24	17	16	23	39	26
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total Organic Carbon	M	2625	%	0.20	[A] 0.70	[A] 6.2	[A] 1.4	[A] 7.5	[A] 0.66	[A] 3.7	[A] 0.73
Mineral Oil (TPH Calculation)	N	2670	mg/kg	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] 6.4
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] 6.4
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0

Results - Soil

Project: 5811

Client: Site Investigations Ltd		**Chemtest Job No.:**			21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:		**Chemtest Sample ID.:**			1287164	1287165	1287166	1287167	1287168	1287169	1287170
Order No.: 60/A/21		Client Sample Ref.:			ES42	ES43	ES44	ES45	ES46	ES47	ES48
		Client Sample ID.:			2	1	2	1	2	1	2
		Sample Location:			TP28	TP30	TP30	TP31	TP31	TP32	TP32
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			1.00	0.30	0.90	0.30	1.50	0.30	1.00
		Bottom Depth (m):			1.00	0.30	0.90	0.30	1.50	0.30	1.00
		Asbestos Lab:			COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] 9.8
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] 5.4	[A] < 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] < 5.0	[A] 5.4	[A] 9.8
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] 16
Benzene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Toluene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Ethylbenzene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
m & p-Xylene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
o-Xylene	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10	0.16	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	0.13	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10	0.12	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	< 0.10	1.4	< 0.10	1.2	< 0.10	1.3	< 0.10
Anthracene	M	2800	mg/kg	0.10	< 0.10	0.26	< 0.10	0.23	< 0.10	0.17	< 0.10
Fluoranthene	M	2800	mg/kg	0.10	< 0.10	1.7	0.36	1.7	< 0.10	1.4	0.14
Pyrene	M	2800	mg/kg	0.10	< 0.10	1.5	0.32	1.6	< 0.10	1.3	0.16
Benzo[a]anthracene	M	2800	mg/kg	0.10	< 0.10	0.83	0.16	0.81	< 0.10	0.67	< 0.10
Chrysene	M	2800	mg/kg	0.10	< 0.10	0.99	0.19	0.93	< 0.10	0.76	< 0.10
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	< 0.10	1.1	< 0.10	1.1	< 0.10	0.79	< 0.10
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	< 0.10	0.35	< 0.10	0.31	< 0.10	0.27	< 0.10
Benzo[a]pyrene	M	2800	mg/kg	0.10	< 0.10	0.84	< 0.10	0.78	< 0.10	0.58	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	< 0.10	0.49	< 0.10	0.54	< 0.10	0.26	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.13	< 0.10	0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	< 0.10	0.50	< 0.10	0.64	< 0.10	0.46	< 0.10
Coronene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 17 PAH's	N	2800	mg/kg	2.0	< 2.0	11	< 2.0	10	< 2.0	8.1	< 2.0
PCB 28	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 52	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 90+101	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 118	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 153	U	2815	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010

Results - Soil

Project: 5811

Client: Site Investigations Ltd					**Chemtest Job No.:**	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504	21-33504
Quotation No.:					**Chemtest Sample ID.:**	1287164	1287165	1287166	1287167	1287168	1287169	1287170
Order No.: 60/A/21					Client Sample Ref.:	ES42	ES43	ES44	ES45	ES46	ES47	ES48
					Client Sample ID.:	2	1	2	1	2	1	2
					Sample Location:	TP28	TP30	TP30	TP31	TP31	TP32	TP32
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	1.00	0.30	0.90	0.30	1.50	0.30	1.00
					Bottom Depth (m):	1.00	0.30	0.90	0.30	1.50	0.30	1.00
					Asbestos Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
PCB 138	U	2815	mg/kg	0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
PCB 180	U	2815	mg/kg	0.010		[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Total PCBs (7 Congeners)	U	2815	mg/kg	0.10		[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10	[A] < 0.10
Total Phenols	M	2920	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33474						
Chemtest Sample ID:	1286930						
Sample Ref:	ES49						
Sample ID:	1						
Sample Location:	TP33						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 4.6	3	5	6
Loss On Ignition	2610	M	%	8.9	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	17	100	--	--
pH	2010	M		8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0079	0.079	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0021	0.021	0.5	10	70
Copper	1455	U	0.0042	0.042	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0036	0.036	0.5	10	30
Nickel	1455	U	0.0018	0.019	0.4	10	40
Lead	1455	U	0.0008	0.0080	0.5	10	50
Antimony	1455	U	0.0011	0.011	0.06	0.7	5
Selenium	1455	U	0.0005	0.0053	0.1	0.5	7
Zinc	1455	U	0.005	0.047	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.54	5.4	10	150	500
Sulphate	1220	U	8.6	86	1000	20000	50000
Total Dissolved Solids	1020	N	140	1400	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	10	100	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	13

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33474						
Chemtest Sample ID:	1286931						
Sample Ref:	ES50						
Sample ID:	2						
Sample Location:	TP33						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 0.81	3	5	6
Loss On Ignition	2610	M	%	3.0	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0014	0.014	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0019	0.019	0.5	10	70
Copper	1455	U	0.0021	0.021	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0060	0.060	0.5	10	30
Nickel	1455	U	0.0014	0.014	0.4	10	40
Lead	1455	U	0.0005	0.0054	0.5	10	50
Antimony	1455	U	0.0006	0.0058	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.005	0.055	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.22	2.2	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	78	780	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	12	120	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	12

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33474						
Chemtest Sample ID:	1286932						
Sample Ref:	ES51						
Sample ID:	1						
Sample Location:	TP34						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 5.9	3	5	6
Loss On Ignition	2610	M	%	8.0	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	17	100	--	--
pH	2010	M		8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0077	0.077	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0023	0.023	0.5	10	70
Copper	1455	U	0.0044	0.044	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0026	0.026	0.5	10	30
Nickel	1455	U	0.0018	0.018	0.4	10	40
Lead	1455	U	0.0009	0.0091	0.5	10	50
Antimony	1455	U	0.0015	0.015	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.008	0.075	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.49	4.9	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	78	780	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	21	210	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	13

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33474						
Chemtest Sample ID:	1286933						
Sample Ref:	ES52						
Sample ID:	2						
Sample Location:	TP34						
Top Depth(m):	0.80						
Bottom Depth(m):	0.80						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 0.30	3	5	6
Loss On Ignition	2610	M	%	8.0	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0024	0.024	0.5	10	70
Copper	1455	U	0.0009	0.0086	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0060	0.060	0.5	10	30
Nickel	1455	U	0.0011	0.011	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0006	0.0058	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.003	0.030	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.35	3.5	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	65	650	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	13	130	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	15

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33474						
Chemtest Sample ID:	1286934						
Sample Ref:	ES53						
Sample ID:	1						
Sample Location:	TP35						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 3.1	3	5	6
Loss On Ignition	2610	M	%	7.9	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	34	100	--	--
pH	2010	M		8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.010	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.011	0.11	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0011	0.011	0.5	10	70
Copper	1455	U	0.0038	0.038	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0052	0.052	0.5	10	30
Nickel	1455	U	0.0012	0.012	0.4	10	40
Lead	1455	U	0.0005	0.0051	0.5	10	50
Antimony	1455	U	0.0025	0.025	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.005	0.051	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.50	5.0	10	150	500
Sulphate	1220	U	1.1	11	1000	20000	50000
Total Dissolved Solids	1020	N	91	910	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	12	120	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	12

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33474						
Chemtest Sample ID:	1286935						
Sample Ref:	ES54						
Sample ID:	2						
Sample Location:	TP35						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 0.86	3	5	6
Loss On Ignition	2610	M	%	3.2	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.019	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0003	0.0027	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0012	0.012	0.5	10	70
Copper	1455	U	0.0014	0.014	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.018	0.18	0.5	10	30
Nickel	1455	U	0.0017	0.017	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.003	0.034	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.30	3.0	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	62	620	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	9.9	99	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33474						
Chemtest Sample ID:	1286936						
Sample Ref:	ES55						
Sample ID:	1						
Sample Location:	TP36						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 16	3	5	6
Loss On Ignition	2610	M	%	17	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	7.8	100	--	--
pH	2010	M		8.2	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.010	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.012	0.12	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0014	0.014	0.5	10	70
Copper	1455	U	0.0029	0.029	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0026	0.026	0.5	10	30
Nickel	1455	U	0.0017	0.017	0.4	10	40
Lead	1455	U	0.0068	0.068	0.5	10	50
Antimony	1455	U	0.0016	0.016	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.007	0.073	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.19	1.9	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	72	710	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.8	68	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	15

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33474						
Chemtest Sample ID:	1286937						
Sample Ref:	ES56						
Sample ID:	2						
Sample Location:	TP36						
Top Depth(m):	0.80						
Bottom Depth(m):	0.80						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 0.59	3	5	6
Loss On Ignition	2610	M	%	2.0	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0070	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0066	0.067	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0019	0.019	0.5	10	70
Copper	1455	U	0.0018	0.018	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.013	0.13	0.5	10	30
Nickel	1455	U	0.0014	0.014	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0012	0.012	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.005	0.046	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.21	2.1	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	59	580	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	15	150	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	12

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33476						
Chemtest Sample ID:	1286943						
Sample Ref:	ES57						
Sample ID:	1						
Sample Location:	TP05						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 3.6	3	5	6
Loss On Ignition	2610	M	%	7.9	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	26	100	--	--
pH	2010	M		8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0050	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0086	0.086	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0067	0.067	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0040	0.040	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0011	0.012	0.06	0.7	5
Selenium	1455	U	0.0006	0.0063	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.44	4.4	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	100	1000	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	7.9	79	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	5.0

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33476						
Chemtest Sample ID:	1286944						
Sample Ref:	ES58						
Sample ID:	2						
Sample Location:	TP05						
Top Depth(m):	0.50						
Bottom Depth(m):	0.50						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 2.1	3	5	6
Loss On Ignition	2610	M	%	5.6	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	12	100	--	--
pH	2010	M		8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0043	0.043	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0031	0.031	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0036	0.036	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0007	0.0069	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.25	2.5	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	85	850	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	4.6	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.6

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33476						
Chemtest Sample ID:	1286945						
Sample Ref:	ES59						
Sample ID:	3						
Sample Location:	TP05						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 2.9	3	5	6
Loss On Ignition	2610	M	%	5.8	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	12	100	--	--
pH	2010	M		8.2	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0070	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0016	0.016	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0016	0.016	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0031	0.031	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0006	0.0059	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.16	1.6	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	52	520	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	3.3	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	4.1

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33476						
Chemtest Sample ID:	1286946						
Sample Ref:	ES60						
Sample ID:	1						
Sample Location:	TP06						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 3.9	3	5	6
Loss On Ignition	2610	M	%	6.8	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	2.8	100	--	--
pH	2010	M		8.2	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0060	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0061	0.061	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0040	0.041	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0025	0.025	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0010	0.010	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.24	2.4	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	59	590	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	5.9	59	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.3

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33476						
Chemtest Sample ID:	1286947						
Sample Ref:	ES61						
Sample ID:	2						
Sample Location:	TP06						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 2.3	3	5	6
Loss On Ignition	2610	M	%	1.8	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.017	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0017	0.017	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0008	0.0079	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0043	0.043	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0005	0.0050	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.14	1.4	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	46	460	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	4.1	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	4.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33476						
Chemtest Sample ID:	1286948						
Sample Ref:	ES62						
Sample ID:	1						
Sample Location:	TP09						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 2.5	3	5	6
Loss On Ignition	2610	M	%	6.4	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0021	0.021	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0027	0.027	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.012	0.12	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0009	0.0089	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.49	4.9	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	85	840	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.4	64	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.2

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33476						
Chemtest Sample ID:	1286949						
Sample Ref:	ES63						
Sample ID:	2						
Sample Location:	TP09						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 1.3	3	5	6
Loss On Ignition	2610	M	%	2.9	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0006	0.0060	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0010	0.010	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.012	0.12	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.22	2.2	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	59	590	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	4.1	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.8

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33476						
Chemtest Sample ID:	1286950						
Sample Ref:	ES64						
Sample ID:	3						
Sample Location:	TP09						
Top Depth(m):	1.50						
Bottom Depth(m):	1.50						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 1.2	3	5	6
Loss On Ignition	2610	M	%	2.3	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0050	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0004	0.0038	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0007	0.0073	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0055	0.055	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.18	1.8	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	59	580	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	5.7	57	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33476						
Chemtest Sample ID:	1286951						
Sample Ref:	ES65						
Sample ID:	1						
Sample Location:	TP10						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 3.1	3	5	6
Loss On Ignition	2610	M	%	6.8	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] 29	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	26	100	--	--
pH	2010	M		8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0050	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0075	0.075	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0033	0.033	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0053	0.053	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	0.0007	0.0065	0.5	10	50
Antimony	1455	U	0.0007	0.0070	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.43	4.3	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	72	720	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.5	65	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	6.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33476						
Chemtest Sample ID:	1286952						
Sample Ref:	ES66						
Sample ID:	2						
Sample Location:	TP10						
Top Depth(m):	1.40						
Bottom Depth(m):	1.40						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 2.5	3	5	6
Loss On Ignition	2610	M	%	6.3	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	62	100	--	--
pH	2010	M		8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0050	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0044	0.044	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0027	0.027	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0043	0.043	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	0.0007	0.0065	0.5	10	50
Antimony	1455	U	0.0005	0.0051	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.27	2.7	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	59	590	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.6	66	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	6.8

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33480						
Chemtest Sample ID:	1286961						
Sample Ref:	ES67						
Sample ID:	1						
Sample Location:	TP11						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 4.2	3	5	6
Loss On Ignition	2610	M	%	7.1	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	6.9	100	--	--
pH	2010	M		8.4	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0024	0.024	0.5	2	25
Barium	1455	U	0.006	0.059	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0006	0.0057	0.5	10	70
Copper	1455	U	0.0042	0.042	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0046	0.047	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0007	0.0073	0.06	0.7	5
Selenium	1455	U	0.0006	0.0057	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.64	6.4	10	150	500
Sulphate	1220	U	2.8	28	1000	20000	50000
Total Dissolved Solids	1020	N	230	2300	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.3	63	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	6.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33480						
Chemtest Sample ID:	1286962						
Sample Ref:	ES68						
Sample ID:	2						
Sample Location:	TP11						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 0.84	3	5	6
Loss On Ignition	2610	M	%	3.1	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0004	0.0042	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0014	0.014	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0095	0.095	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.42	4.2	10	150	500
Sulphate	1220	U	2.0	20	1000	20000	50000
Total Dissolved Solids	1020	N	72	710	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	19	190	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33480						
Chemtest Sample ID:	1286963						
Sample Ref:	ES69						
Sample ID:	1						
Sample Location:	TP12						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 4.9	3	5	6
Loss On Ignition	2610	M	%	8.8	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	22	100	--	--
pH	2010	M		8.2	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0017	0.017	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0033	0.033	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0042	0.042	0.5	10	30
Nickel	1455	U	0.0006	0.0057	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.27	2.7	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	120	1200	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.4	64	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	6.6

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33480						
Chemtest Sample ID:	1286964						
Sample Ref:	ES70						
Sample ID:	2						
Sample Location:	TP12						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 2.0	3	5	6
Loss On Ignition	2610	M	%	3.2	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.014	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0016	0.017	0.5	2	25
Barium	1455	U	0.005	0.052	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0006	0.0061	0.5	10	70
Copper	1455	U	0.0018	0.018	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0050	0.050	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0006	0.0055	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.23	2.3	10	150	500
Sulphate	1220	U	14	140	1000	20000	50000
Total Dissolved Solids	1020	N	78	780	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.1	61	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	5.9

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287123						
Sample Ref:	ES1						
Sample ID:	1						
Sample Location:	TP1						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 3.5	3	5	6
Loss On Ignition	2610	M	%	6.9	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] 23	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	16	100	--	--
pH	2010	M		8.2	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0040	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.011	0.11	0.5	2	25
Barium	1455	U	0.006	0.064	20	100	300
Cadmium	1455	U	0.00020	0.0020	0.04	1	5
Chromium	1455	U	0.0008	0.0085	0.5	10	70
Copper	1455	U	0.0049	0.049	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0056	0.056	0.5	10	30
Nickel	1455	U	0.0008	0.0076	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0023	0.023	0.06	0.7	5
Selenium	1455	U	0.0012	0.012	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.29	2.9	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	250	2500	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	4.6	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.9

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287124						
Sample Ref:	ES2						
Sample ID:	2						
Sample Location:	TP1						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 2.3	3	5	6
Loss On Ignition	2610	M	%	4.7	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0060	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0034	0.034	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	0.00022	0.0022	0.04	1	5
Chromium	1455	U	0.0006	0.0056	0.5	10	70
Copper	1455	U	0.0020	0.020	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.048	0.48	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0018	0.018	0.06	0.7	5
Selenium	1455	U	0.0010	0.0099	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.24	2.4	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	110	1100	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	4.4	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.9

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287125						
Sample Ref:	ES3						
Sample ID:	1						
Sample Location:	TP2						
Top Depth(m):	0.20						
Bottom Depth(m):	0.20						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 15	3	5	6
Loss On Ignition	2610	M	%	14	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.010	0.10	0.5	2	25
Barium	1455	U	0.013	0.13	20	100	300
Cadmium	1455	U	0.00021	0.0021	0.04	1	5
Chromium	1455	U	0.0006	0.0056	0.5	10	70
Copper	1455	U	0.0040	0.040	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0049	0.049	0.5	10	30
Nickel	1455	U	0.0011	0.011	0.4	10	40
Lead	1455	U	0.0019	0.019	0.5	10	50
Antimony	1455	U	0.0018	0.018	0.06	0.7	5
Selenium	1455	U	0.0011	0.012	0.1	0.5	7
Zinc	1455	U	0.003	0.034	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.16	1.6	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	190	1900	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	5.5	55	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	4.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287126						
Sample Ref:	ES4						
Sample ID:	2						
Sample Location:	TP2						
Top Depth(m):	1.40						
Bottom Depth(m):	1.40						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 4.6	3	5	6
Loss On Ignition	2610	M	%	5.7	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	38	100	--	--
pH	2010	M		8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0070	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0013	0.013	0.5	2	25
Barium	1455	U	0.013	0.13	20	100	300
Cadmium	1455	U	0.00017	0.0017	0.04	1	5
Chromium	1455	U	0.0025	0.025	0.5	10	70
Copper	1455	U	0.018	0.18	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.023	0.23	0.5	10	30
Nickel	1455	U	0.0020	0.020	0.4	10	40
Lead	1455	U	0.0005	0.0052	0.5	10	50
Antimony	1455	U	0.0011	0.011	0.06	0.7	5
Selenium	1455	U	0.0019	0.019	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	6.7	67	800	15000	25000
Fluoride	1220	U	0.22	2.2	10	150	500
Sulphate	1220	U	15	150	1000	20000	50000
Total Dissolved Solids	1020	N	420	4200	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	5.3	53	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	6.9

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287127						
Sample Ref:	ES5						
Sample ID:	1						
Sample Location:	TP3						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 4.5	3	5	6
Loss On Ignition	2610	M	%	8.6	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	61	100	--	--
pH	2010	M		8.4	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0061	0.061	0.5	2	25
Barium	1455	U	0.008	0.085	20	100	300
Cadmium	1455	U	0.00016	0.0016	0.04	1	5
Chromium	1455	U	0.0006	0.0058	0.5	10	70
Copper	1455	U	0.0043	0.043	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0041	0.042	0.5	10	30
Nickel	1455	U	0.0008	0.0079	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0016	0.016	0.06	0.7	5
Selenium	1455	U	0.0009	0.0085	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.19	1.9	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	140	1400	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	5.7	57	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.2

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287128						
Sample Ref:	ES6						
Sample ID:	2						
Sample Location:	TP3						
Top Depth(m):	1.20						
Bottom Depth(m):	1.20						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 4.9	3	5	6
Loss On Ignition	2610	M	%	7.7	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] 160	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	79	100	--	--
pH	2010	M		8.4	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0050	0.050	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	0.00017	0.0017	0.04	1	5
Chromium	1455	U	0.0006	0.0060	0.5	10	70
Copper	1455	U	0.0045	0.045	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.018	0.18	0.5	10	30
Nickel	1455	U	0.0015	0.015	0.4	10	40
Lead	1455	U	0.0010	0.010	0.5	10	50
Antimony	1455	U	0.0022	0.022	0.06	0.7	5
Selenium	1455	U	0.0010	0.0098	0.1	0.5	7
Zinc	1455	U	0.003	0.026	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.16	1.6	10	150	500
Sulphate	1220	U	1.4	14	1000	20000	50000
Total Dissolved Solids	1020	N	98	980	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	7.9	79	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	6.8

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287129						
Sample Ref:	ES7						
Sample ID:	1						
Sample Location:	TP4						
Top Depth(m):	0.40						
Bottom Depth(m):	0.40						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 5.4	3	5	6
Loss On Ignition	2610	M	%	5.2	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	2.2	100	--	--
pH	2010	M		8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0070	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0007	0.0067	0.5	2	25
Barium	1455	U	0.022	0.22	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0015	0.015	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.034	0.34	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0006	0.0063	0.06	0.7	5
Selenium	1455	U	0.0014	0.014	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.43	4.3	10	150	500
Sulphate	1220	U	4.7	47	1000	20000	50000
Total Dissolved Solids	1020	N	100	1000	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	5.4	54	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.6

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287130						
Sample Ref:	ES8						
Sample ID:	2						
Sample Location:	TP4						
Top Depth(m):	1.50						
Bottom Depth(m):	1.50						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 1.5	3	5	6
Loss On Ignition	2610	M	%	4.6	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.057	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0015	0.015	0.5	2	25
Barium	1455	U	0.008	0.082	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0016	0.016	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.021	0.21	0.5	10	30
Nickel	1455	U	0.0006	0.0059	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0006	0.0061	0.06	0.7	5
Selenium	1455	U	0.0006	0.0057	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.31	3.1	10	150	500
Sulphate	1220	U	3.2	32	1000	20000	50000
Total Dissolved Solids	1020	N	110	1100	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	3.0	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	2.9

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287131						
Sample Ref:	ES9						
Sample ID:	1						
Sample Location:	TP7						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 4.0	3	5	6
Loss On Ignition	2610	M	%	9.0	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] 88	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	9.3	100	--	--
pH	2010	M		8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.014	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0057	0.057	0.5	2	25
Barium	1455	U	0.013	0.13	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0061	0.061	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0050	0.050	0.5	10	30
Nickel	1455	U	0.0011	0.011	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0006	0.0056	0.06	0.7	5
Selenium	1455	U	0.0007	0.0072	0.1	0.5	7
Zinc	1455	U	0.003	0.034	4	50	200
Chloride	1220	U	2.0	20	800	15000	25000
Fluoride	1220	U	0.22	2.2	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	180	1800	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.3	63	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287132						
Sample Ref:	ES10						
Sample ID:	2						
Sample Location:	TP7						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 1.5	3	5	6
Loss On Ignition	2610	M	%	12	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] 98	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0055	0.055	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0011	0.011	0.5	10	70
Copper	1455	U	0.0028	0.028	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.020	0.20	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0016	0.016	0.06	0.7	5
Selenium	1455	U	0.0010	0.0097	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.47	4.7	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	120	1200	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	3.8	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.2

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287133						
Sample Ref:	ES11						
Sample ID:	1						
Sample Location:	TP8						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 6.6	3	5	6
Loss On Ignition	2610	M	%	10	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	12	100	--	--
pH	2010	M		8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0070	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.014	0.14	0.5	2	25
Barium	1455	U	0.006	0.063	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0030	0.030	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.011	0.11	0.5	10	30
Nickel	1455	U	0.0005	0.0054	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0031	0.031	0.06	0.7	5
Selenium	1455	U	0.0010	0.0097	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.29	2.9	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	120	1200	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	3.9	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287134						
Sample Ref:	ES12						
Sample ID:	2						
Sample Location:	TP8						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 1.8	3	5	6
Loss On Ignition	2610	M	%	2.9	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.4	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0070	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0010	0.0098	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0010	0.010	0.5	10	70
Copper	1455	U	0.0010	0.010	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.018	0.18	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0007	0.0072	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.23	2.3	10	150	500
Sulphate	1220	U	1.1	11	1000	20000	50000
Total Dissolved Solids	1020	N	78	780	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	3.4	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	12

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287135						
Sample Ref:	ES13						
Sample ID:	1						
Sample Location:	TP13						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 1.8	3	5	6
Loss On Ignition	2610	M	%	4.6	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] 130	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.014	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0006	0.0063	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0020	0.020	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0063	0.063	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0005	0.0052	0.06	0.7	5
Selenium	1455	U	0.0006	0.0062	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.32	3.2	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	72	720	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	5.4	54	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	5.1

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287136						
Sample Ref:	ES14						
Sample ID:	2						
Sample Location:	TP13						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 2.4	3	5	6
Loss On Ignition	2610	M	%	2.2	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0060	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0005	0.0050	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0006	0.0061	0.5	10	70
Copper	1455	U	0.0008	0.0080	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0045	0.045	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	0.0006	0.0058	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.36	3.6	10	150	500
Sulphate	1220	U	2.4	24	1000	20000	50000
Total Dissolved Solids	1020	N	72	720	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	2.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287137						
Sample Ref:	ES15						
Sample ID:	1						
Sample Location:	TP14						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 3.7	3	5	6
Loss On Ignition	2610	M	%	7.9	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] 79	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	24	100	--	--
pH	2010	M		8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0027	0.027	0.5	2	25
Barium	1455	U	0.010	0.10	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0041	0.042	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.014	0.14	0.5	10	30
Nickel	1455	U	0.0005	0.0050	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0020	0.020	0.06	0.7	5
Selenium	1455	U	0.0009	0.0091	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	2.1	21	800	15000	25000
Fluoride	1220	U	0.37	3.7	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	140	1400	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.9	69	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.1

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287138						
Sample Ref:	ES16						
Sample ID:	2						
Sample Location:	TP14						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 1.1	3	5	6
Loss On Ignition	2610	M	%	2.5	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.7	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0005	0.0050	0.5	2	25
Barium	1455	U	0.006	0.057	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0011	0.011	0.5	10	70
Copper	1455	U	0.0009	0.0095	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0045	0.045	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	2.1	21	800	15000	25000
Fluoride	1220	U	0.31	3.1	10	150	500
Sulphate	1220	U	7.3	73	1000	20000	50000
Total Dissolved Solids	1020	N	150	1500	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	2.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287139						
Sample Ref:	ES17						
Sample ID:	1						
Sample Location:	TP15						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 3.0	3	5	6
Loss On Ignition	2610	M	%	5.5	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	12	100	--	--
pH	2010	M		8.4	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0099	0.099	0.5	2	25
Barium	1455	U	0.007	0.075	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0018	0.019	0.5	10	70
Copper	1455	U	0.0056	0.056	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0070	0.070	0.5	10	30
Nickel	1455	U	0.0009	0.0086	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0020	0.020	0.06	0.7	5
Selenium	1455	U	0.0011	0.011	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.34	3.4	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	780	7800	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	5.6	56	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.2

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287140						
Sample Ref:	ES18						
Sample ID:	2						
Sample Location:	TP15						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 0.68	3	5	6
Loss On Ignition	2610	M	%	2.2	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0008	0.0079	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0011	0.011	0.5	10	70
Copper	1455	U	0.0020	0.021	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.017	0.17	0.5	10	30
Nickel	1455	U	0.0006	0.0058	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0006	0.0060	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.003	0.025	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.28	2.8	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	180	1800	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	12	120	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.3

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287141						
Sample Ref:	ES19						
Sample ID:	1						
Sample Location:	TP16						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 4.7	3	5	6
Loss On Ignition	2610	M	%	9.0	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	5.7	100	--	--
pH	2010	M		8.2	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0068	0.068	0.5	2	25
Barium	1455	U	0.007	0.075	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0072	0.072	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0046	0.046	0.5	10	30
Nickel	1455	U	0.0010	0.010	0.4	10	40
Lead	1455	U	0.0008	0.0078	0.5	10	50
Antimony	1455	U	0.0010	0.010	0.06	0.7	5
Selenium	1455	U	0.0011	0.011	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.25	2.5	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	140	1400	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	5.9	59	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	10

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287142						
Sample Ref:	ES20						
Sample ID:	2						
Sample Location:	TP16						
Top Depth(m):	0.60						
Bottom Depth(m):	0.60						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 1.1	3	5	6
Loss On Ignition	2610	M	%	3.6	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.011	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0012	0.012	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0015	0.015	0.5	10	70
Copper	1455	U	0.0017	0.017	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.023	0.23	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0008	0.0077	0.06	0.7	5
Selenium	1455	U	0.0006	0.0064	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.34	3.4	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	130	1300	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	5.3	53	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287143						
Sample Ref:	ES21						
Sample ID:	1						
Sample Location:	TP17						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 3.0	3	5	6
Loss On Ignition	2610	M	%	6.7	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	22	100	--	--
pH	2010	M		8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0080	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.016	0.16	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0036	0.036	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0058	0.058	0.5	10	30
Nickel	1455	U	0.0008	0.0084	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0025	0.025	0.06	0.7	5
Selenium	1455	U	0.0009	0.0094	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.31	3.1	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	120	1200	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	7.8	78	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287144						
Sample Ref:	ES22						
Sample ID:	2						
Sample Location:	TP17						
Top Depth(m):	0.60						
Bottom Depth(m):	0.60						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 0.76	3	5	6
Loss On Ignition	2610	M	%	3.1	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0060	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0073	0.073	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0005	0.0053	0.5	10	70
Copper	1455	U	0.0018	0.018	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.011	0.11	0.5	10	30
Nickel	1455	U	0.0006	0.0064	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0015	0.015	0.06	0.7	5
Selenium	1455	U	0.0006	0.0062	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.20	2.0	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	41	410	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	19	190	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	6.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287145						
Sample Ref:	ES23						
Sample ID:	1						
Sample Location:	TP18						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 3.6	3	5	6
Loss On Ignition	2610	M	%	6.5	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] 430	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	20	100	--	--
pH	2010	M		8.2	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.013	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.011	0.11	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0032	0.032	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.010	0.10	0.5	10	30
Nickel	1455	U	0.0005	0.0054	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0044	0.044	0.06	0.7	5
Selenium	1455	U	0.0008	0.0080	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.23	2.3	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	120	1200	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.2	62	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.9

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287146						
Sample Ref:	ES24						
Sample ID:	2						
Sample Location:	TP18						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 0.37	3	5	6
Loss On Ignition	2610	M	%	2.2	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0080	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0053	0.053	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0009	0.0094	0.5	10	70
Copper	1455	U	0.0012	0.012	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.027	0.27	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0019	0.019	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.23	2.3	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	98	980	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	3.7	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	6.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287147						
Sample Ref:	ES25						
Sample ID:	1						
Sample Location:	TP19						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 4.7	3	5	6
Loss On Ignition	2610	M	%	7.9	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	11	100	--	--
pH	2010	M		8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.025	0.25	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0033	0.033	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0083	0.083	0.5	10	30
Nickel	1455	U	0.0006	0.0056	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0055	0.055	0.06	0.7	5
Selenium	1455	U	0.0010	0.010	0.1	0.5	7
Zinc	1455	U	0.003	0.030	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.24	2.4	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	110	1100	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	4.4	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.1

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287148						
Sample Ref:	ES26						
Sample ID:	2						
Sample Location:	TP19						
Top Depth(m):	0.80						
Bottom Depth(m):	0.80						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 3.9	3	5	6
Loss On Ignition	2610	M	%	2.7	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0093	0.093	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0019	0.019	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.021	0.21	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0032	0.032	0.06	0.7	5
Selenium	1455	U	0.0009	0.0086	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.24	2.4	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	140	1400	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	12	120	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	13

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287149						
Sample Ref:	ES27						
Sample ID:	1						
Sample Location:	TP20						
Top Depth(m):	0.40						
Bottom Depth(m):	0.40						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 1.4	3	5	6
Loss On Ignition	2610	M	%	6.6	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.013	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0016	0.016	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0007	0.0069	0.5	10	70
Copper	1455	U	0.0023	0.024	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0076	0.076	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0008	0.0077	0.06	0.7	5
Selenium	1455	U	0.0006	0.0063	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.28	2.8	10	150	500
Sulphate	1220	U	2.0	20	1000	20000	50000
Total Dissolved Solids	1020	N	100	1000	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	5.5	55	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	6.3

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287150						
Sample Ref:	ES28						
Sample ID:	2						
Sample Location:	TP20						
Top Depth(m):	0.80						
Bottom Depth(m):	0.80						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 1.1	3	5	6
Loss On Ignition	2610	M	%	3.6	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.4	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0040	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0003	0.0034	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0008	0.0079	0.5	10	70
Copper	1455	U	0.0011	0.011	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.011	0.11	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0006	0.0059	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.28	2.8	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	72	710	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	4.0	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	14

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287151						
Sample Ref:	ES29						
Sample ID:	1						
Sample Location:	TP22						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 6.0	3	5	6
Loss On Ignition	2610	M	%	10	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	11	100	--	--
pH	2010	M		8.7	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0040	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.030	0.30	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0044	0.044	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0056	0.056	0.5	10	30
Nickel	1455	U	0.0009	0.0091	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0049	0.049	0.06	0.7	5
Selenium	1455	U	0.0012	0.012	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.22	2.2	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	100	1000	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	5.3	53	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.1

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287152						
Sample Ref:	ES30						
Sample ID:	2						
Sample Location:	TP22						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 1.4	3	5	6
Loss On Ignition	2610	M	%	0.96	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0008	0.0078	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0009	0.0093	0.5	10	70
Copper	1455	U	0.0011	0.011	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.020	0.20	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0006	0.0060	0.06	0.7	5
Selenium	1455	U	0.0008	0.0077	0.1	0.5	7
Zinc	1455	U	0.003	0.027	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.33	3.3	10	150	500
Sulphate	1220	U	1.6	16	1000	20000	50000
Total Dissolved Solids	1020	N	180	1800	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	4.0	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	6.9

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287153						
Sample Ref:	ES31						
Sample ID:	1						
Sample Location:	TP23						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 7.2	3	5	6
Loss On Ignition	2610	M	%	9.3	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] 100	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	27	100	--	--
pH	2010	M		8.2	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.016	0.16	0.5	2	25
Barium	1455	U	0.006	0.062	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0046	0.046	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0072	0.072	0.5	10	30
Nickel	1455	U	0.0008	0.0083	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0025	0.025	0.06	0.7	5
Selenium	1455	U	0.0012	0.012	0.1	0.5	7
Zinc	1455	U	0.003	0.025	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.32	3.2	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	110	1100	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	5.1	51	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.1

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287154						
Sample Ref:	ES32						
Sample ID:	2						
Sample Location:	TP23						
Top Depth(m):	0.80						
Bottom Depth(m):	0.80						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 1.4	3	5	6
Loss On Ignition	2610	M	%	3.3	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.015	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0017	0.017	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0012	0.012	0.5	10	70
Copper	1455	U	0.0016	0.016	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.030	0.30	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0013	0.013	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.26	2.6	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	72	710	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	9.1	91	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	17

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287155						
Sample Ref:	ES33						
Sample ID:	1						
Sample Location:	TP24						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 5.4	3	5	6
Loss On Ignition	2610	M	%	11	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	9.6	100	--	--
pH	2010	M		8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.054	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.013	0.13	0.5	2	25
Barium	1455	U	0.012	0.12	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0039	0.039	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.012	0.12	0.5	10	30
Nickel	1455	U	0.0007	0.0072	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0048	0.048	0.06	0.7	5
Selenium	1455	U	0.0008	0.0078	0.1	0.5	7
Zinc	1455	U	0.003	0.027	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.21	2.1	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	130	1300	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.0	60	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.0

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287156						
Sample Ref:	ES34						
Sample ID:	2						
Sample Location:	TP24						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 3.7	3	5	6
Loss On Ignition	2610	M	%	5.3	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] 20	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	57	100	--	--
pH	2010	M		8.4	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.022	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0093	0.093	0.5	2	25
Barium	1455	U	0.005	0.053	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0006	0.0062	0.5	10	70
Copper	1455	U	0.0036	0.037	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.016	0.16	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0026	0.026	0.06	0.7	5
Selenium	1455	U	0.0007	0.0070	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.27	2.7	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	110	1100	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	7.3	73	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	5.0

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287157						
Sample Ref:	ES35						
Sample ID:	1						
Sample Location:	TP25						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 6.3	3	5	6
Loss On Ignition	2610	M	%	5.3	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	20	100	--	--
pH	2010	M		8.7	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.030	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.011	0.11	0.5	2	25
Barium	1455	U	0.011	0.11	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.014	0.14	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0078	0.078	0.5	10	30
Nickel	1455	U	0.0007	0.0067	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0020	0.020	0.06	0.7	5
Selenium	1455	U	0.0010	0.010	0.1	0.5	7
Zinc	1455	U	0.004	0.040	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.40	4.0	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	140	1400	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	5.4	54	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287158						
Sample Ref:	ES36						
Sample ID:	2						
Sample Location:	TP25						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 2.7	3	5	6
Loss On Ignition	2610	M	%	4.2	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.016	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0032	0.032	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0006	0.0063	0.5	10	70
Copper	1455	U	0.0025	0.025	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.042	0.42	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0017	0.018	0.06	0.7	5
Selenium	1455	U	0.0007	0.0071	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.28	2.8	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	110	1100	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.7	67	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	4.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287159						
Sample Ref:	ES37						
Sample ID:	1						
Sample Location:	TP26						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 2.8	3	5	6
Loss On Ignition	2610	M	%	4.9	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	2.1	100	--	--
pH	2010	M		8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.038	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0031	0.031	0.5	2	25
Barium	1455	U	0.006	0.065	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0008	0.0084	0.5	10	70
Copper	1455	U	0.0025	0.025	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.011	0.11	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0010	0.010	0.06	0.7	5
Selenium	1455	U	0.0005	0.0054	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.30	3.0	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	120	1200	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	4.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	6.2

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287160						
Sample Ref:	ES38						
Sample ID:	2						
Sample Location:	TP26						
Top Depth(m):	1.20						
Bottom Depth(m):	1.20						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 2.6	3	5	6
Loss On Ignition	2610	M	%	5.6	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.030	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0022	0.022	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0012	0.012	0.5	10	70
Copper	1455	U	0.0015	0.015	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.040	0.40	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0011	0.011	0.06	0.7	5
Selenium	1455	U	0.0006	0.0057	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.22	2.2	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	78	780	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	12	120	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.3

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287161						
Sample Ref:	ES39						
Sample ID:	1						
Sample Location:	TP27						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 3.1	3	5	6
Loss On Ignition	2610	M	%	6.1	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.4	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.057	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0031	0.031	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0009	0.0087	0.5	10	70
Copper	1455	U	0.0022	0.023	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.037	0.37	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0018	0.018	0.06	0.7	5
Selenium	1455	U	0.0008	0.0079	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.28	2.8	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	130	1300	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	15	150	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	20

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287162						
Sample Ref:	ES40						
Sample ID:	2						
Sample Location:	TP27						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 0.40	3	5	6
Loss On Ignition	2610	M	%	7.3	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.4	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.049	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0005	0.0050	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0009	0.0088	0.5	10	70
Copper	1455	U	0.0011	0.011	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.029	0.29	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0007	0.0069	0.06	0.7	5
Selenium	1455	U	0.0006	0.0065	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.32	3.2	10	150	500
Sulphate	1220	U	3.6	36	1000	20000	50000
Total Dissolved Solids	1020	N	85	840	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.2	62	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	17

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287163						
Sample Ref:	ES41						
Sample ID:	1						
Sample Location:	TP28						
Top Depth(m):	0.20						
Bottom Depth(m):	0.30						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 3.9	3	5	6
Loss On Ignition	2610	M	%	4.0	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] 57	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	22	100	--	--
pH	2010	M		8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.021	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.010	0.10	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0006	0.0056	0.5	10	70
Copper	1455	U	0.0042	0.042	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.022	0.22	0.5	10	30
Nickel	1455	U	0.0005	0.0052	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0031	0.031	0.06	0.7	5
Selenium	1455	U	0.0007	0.0066	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.39	3.9	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	200	2000	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	5.0	50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.0

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287164						
Sample Ref:	ES42						
Sample ID:	2						
Sample Location:	TP28						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 0.70	3	5	6
Loss On Ignition	2610	M	%	0.91	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] 28	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.7	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.019	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0005	0.0045	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0007	0.0067	0.5	10	70
Copper	1455	U	0.0011	0.011	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.017	0.17	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.37	3.7	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	72	710	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	3.1	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.1

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287165						
Sample Ref:	ES43						
Sample ID:	1						
Sample Location:	TP30						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 6.2	3	5	6
Loss On Ignition	2610	M	%	9.1	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] 180	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	11	100	--	--
pH	2010	M		8.4	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.017	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0040	0.040	0.5	2	25
Barium	1455	U	0.009	0.092	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0062	0.062	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0059	0.059	0.5	10	30
Nickel	1455	U	0.0007	0.0074	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0010	0.0099	0.06	0.7	5
Selenium	1455	U	0.0009	0.0087	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.30	3.0	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	160	1600	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.2	62	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.1

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287166						
Sample Ref:	ES44						
Sample ID:	2						
Sample Location:	TP30						
Top Depth(m):	0.90						
Bottom Depth(m):	0.90						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 1.4	3	5	6
Loss On Ignition	2610	M	%	1.6	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0090	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0013	0.013	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0010	0.010	0.5	10	70
Copper	1455	U	0.0016	0.016	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.016	0.16	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0007	0.0068	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.37	3.7	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	91	910	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	4.4	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	10

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287167						
Sample Ref:	ES45						
Sample ID:	1						
Sample Location:	TP31						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	[A] 7.5	3	5	6
Loss On Ignition	2610	M	%	11	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] 35	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	10	100	--	--
pH	2010	M		8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0040	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0051	0.051	0.5	2	25
Barium	1455	U	0.010	0.098	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0064	0.064	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0037	0.037	0.5	10	30
Nickel	1455	U	0.0008	0.0080	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0007	0.0074	0.06	0.7	5
Selenium	1455	U	0.0006	0.0064	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.28	2.8	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	160	1600	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	7.3	73	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287168						
Sample Ref:	ES46						
Sample ID:	2						
Sample Location:	TP31						
Top Depth(m):	1.50						
Bottom Depth(m):	1.50						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 0.66	3	5	6
Loss On Ignition	2610	M	%	2.1	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.015	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0005	0.0055	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0005	0.0052	0.5	10	70
Copper	1455	U	0.0011	0.011	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.020	0.20	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.31	3.1	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	78	780	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	10	100	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	12

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287169						
Sample Ref:	ES47						
Sample ID:	1						
Sample Location:	TP32						
Top Depth(m):	0.30						
Bottom Depth(m):	0.30						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 3.7	3	5	6
Loss On Ignition	2610	M	%	6.4	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] 48	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	8.1	100	--	--
pH	2010	M		8.4	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0080	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.017	0.17	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0047	0.047	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0035	0.035	0.5	10	30
Nickel	1455	U	0.0006	0.0061	0.4	10	40
Lead	1455	U	0.0005	0.0052	0.5	10	50
Antimony	1455	U	0.0015	0.015	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	5.7	57	800	15000	25000
Fluoride	1220	U	0.32	3.2	10	150	500
Sulphate	1220	U	3.3	33	1000	20000	50000
Total Dissolved Solids	1020	N	98	970	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	12	120	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	10

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5811

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-33504						
Chemtest Sample ID:	1287170						
Sample Ref:	ES48						
Sample ID:	2						
Sample Location:	TP32						
Top Depth(m):	1.00						
Bottom Depth(m):	1.00						
Sampling Date:					**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	M	%	[A] 0.73	3	5	6
Loss On Ignition	2610	M	%	1.5	--	--	10
Total BTEX	2760	M	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.7	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0080	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0011	0.011	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0006	0.0063	0.5	10	70
Copper	1455	U	0.0012	0.012	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.018	0.18	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0007	0.0070	0.06	0.7	5
Selenium	1455	U	0.0005	0.0053	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.34	3.4	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	85	840	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	8.7	87	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

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Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1286930	ES49	1	TP33		A	Amber Glass 250ml
1286930	ES49	1	TP33		A	Amber Glass 60ml
1286930	ES49	1	TP33		A	Plastic Tub 500g
1286931	ES50	2	TP33		A	Amber Glass 250ml
1286931	ES50	2	TP33		A	Amber Glass 60ml
1286931	ES50	2	TP33		A	Plastic Tub 500g
1286932	ES51	1	TP34		A	Amber Glass 250ml
1286932	ES51	1	TP34		A	EPA Vial 40ml
1286932	ES51	1	TP34		A	Plastic Tub 500g
1286933	ES52	2	TP34		A	Amber Glass 250ml
1286933	ES52	2	TP34		A	EPA Vial 40ml
1286933	ES52	2	TP34		A	Plastic Tub 500g
1286934	ES53	1	TP35		A	Amber Glass 250ml
1286934	ES53	1	TP35		A	EPA Vial 40ml
1286934	ES53	1	TP35		A	Plastic Tub 500g
1286935	ES54	2	TP35		A	Amber Glass 250ml
1286935	ES54	2	TP35		A	EPA Vial 40ml
1286935	ES54	2	TP35		A	Plastic Tub 500g
1286936	ES55	1	TP36		A	Amber Glass 250ml
1286936	ES55	1	TP36		A	EPA Vial 40ml
1286936	ES55	1	TP36		A	Plastic Tub 500g
1286937	ES56	2	TP36		A	Amber Glass 250ml
1286937	ES56	2	TP36		A	EPA Vial 40ml
1286937	ES56	2	TP36		A	Plastic Tub 500g

Deviations

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Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1286943	ES57	1	TP05		A	Amber Glass 250ml
1286943	ES57	1	TP05		A	Amber Glass 60ml
1286943	ES57	1	TP05		A	Plastic Tub 500g
1286944	ES58	2	TP05		A	Amber Glass 250ml
1286944	ES58	2	TP05		A	Amber Glass 60ml
1286944	ES58	2	TP05		A	Plastic Tub 500g
1286945	ES59	3	TP05		A	Amber Glass 250ml
1286945	ES59	3	TP05		A	Amber Glass 60ml
1286945	ES59	3	TP05		A	Plastic Tub 500g
1286946	ES60	1	TP06		A	Amber Glass 250ml
1286946	ES60	1	TP06		A	Amber Glass 60ml
1286946	ES60	1	TP06		A	Plastic Tub 500g
1286947	ES61	2	TP06		A	Amber Glass 250ml
1286947	ES61	2	TP06		A	Amber Glass 60ml
1286947	ES61	2	TP06		A	Plastic Tub 500g
1286948	ES62	1	TP09		A	Amber Glass 250ml
1286948	ES62	1	TP09		A	Amber Glass 60ml
1286948	ES62	1	TP09		A	Plastic Tub 500g
1286949	ES63	2	TP09		A	Amber Glass 250ml
1286949	ES63	2	TP09		A	Amber Glass 60ml
1286949	ES63	2	TP09		A	Plastic Tub 500g
1286950	ES64	3	TP09		A	Amber Glass 250ml
1286950	ES64	3	TP09		A	Amber Glass 60ml
1286950	ES64	3	TP09		A	Plastic Tub 500g

Deviations

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Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1286951	ES65	1	TP10		A	Amber Glass 250ml
1286951	ES65	1	TP10		A	Amber Glass 60ml
1286951	ES65	1	TP10		A	Plastic Tub 500g
1286952	ES66	2	TP10		A	Amber Glass 250ml
1286952	ES66	2	TP10		A	Amber Glass 60ml
1286952	ES66	2	TP10		A	Plastic Tub 500g
1286961	ES67	1	TP11		A	Amber Glass 250ml
1286961	ES67	1	TP11		A	Amber Glass 60ml
1286961	ES67	1	TP11		A	Plastic Tub 500g
1286962	ES68	2	TP11		A	Amber Glass 250ml
1286962	ES68	2	TP11		A	Amber Glass 60ml
1286962	ES68	2	TP11		A	Plastic Tub 500g
1286963	ES69	1	TP12		A	Amber Glass 250ml
1286963	ES69	1	TP12		A	Amber Glass 60ml
1286963	ES69	1	TP12		A	Plastic Tub 500g
1286964	ES70	2	TP12		A	Amber Glass 250ml
1286964	ES70	2	TP12		A	Amber Glass 60ml
1286964	ES70	2	TP12		A	Plastic Tub 500g
1287123	ES1	1	TP1		A	Amber Glass 250ml
1287123	ES1	1	TP1		A	Amber Glass 60ml
1287123	ES1	1	TP1		A	Plastic Tub 500g
1287124	ES2	2	TP1		A	Amber Glass 250ml
1287124	ES2	2	TP1		A	Amber Glass 60ml
1287124	ES2	2	TP1		A	Plastic Tub 500g

Deviations

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Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1287125	ES3	1	TP2		A	Amber Glass 250ml
1287125	ES3	1	TP2		A	Amber Glass 60ml
1287125	ES3	1	TP2		A	Plastic Tub 500g
1287126	ES4	2	TP2		A	Amber Glass 250ml
1287126	ES4	2	TP2		A	Amber Glass 60ml
1287126	ES4	2	TP2		A	Plastic Tub 500g
1287127	ES5	1	TP3		A	Amber Glass 250ml
1287127	ES5	1	TP3		A	Amber Glass 60ml
1287127	ES5	1	TP3		A	Plastic Tub 500g
1287128	ES6	2	TP3		A	Amber Glass 250ml
1287128	ES6	2	TP3		A	Amber Glass 60ml
1287128	ES6	2	TP3		A	Plastic Tub 500g
1287129	ES7	1	TP4		A	Amber Glass 250ml
1287129	ES7	1	TP4		A	Amber Glass 60ml
1287129	ES7	1	TP4		A	Plastic Tub 500g
1287130	ES8	2	TP4		A	Amber Glass 250ml
1287130	ES8	2	TP4		A	Amber Glass 60ml
1287130	ES8	2	TP4		A	Plastic Tub 500g
1287131	ES9	1	TP7		A	Amber Glass 250ml
1287131	ES9	1	TP7		A	Amber Glass 60ml
1287131	ES9	1	TP7		A	Plastic Tub 500g
1287132	ES10	2	TP7		A	Amber Glass 250ml
1287132	ES10	2	TP7		A	Amber Glass 60ml
1287132	ES10	2	TP7		A	Plastic Tub 500g

Deviations

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Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1287133	ES11	1	TP8		A	Amber Glass 250ml
1287133	ES11	1	TP8		A	Amber Glass 60ml
1287133	ES11	1	TP8		A	Plastic Tub 500g
1287134	ES12	2	TP8		A	Amber Glass 250ml
1287134	ES12	2	TP8		A	Amber Glass 60ml
1287134	ES12	2	TP8		A	Plastic Tub 500g
1287135	ES13	1	TP13		A	Amber Glass 250ml
1287135	ES13	1	TP13		A	Amber Glass 60ml
1287135	ES13	1	TP13		A	Plastic Tub 500g
1287136	ES14	2	TP13		A	Amber Glass 250ml
1287136	ES14	2	TP13		A	Amber Glass 60ml
1287136	ES14	2	TP13		A	Plastic Tub 500g
1287137	ES15	1	TP14		A	Amber Glass 250ml
1287137	ES15	1	TP14		A	Amber Glass 60ml
1287137	ES15	1	TP14		A	Plastic Tub 500g
1287138	ES16	2	TP14		A	Amber Glass 250ml
1287138	ES16	2	TP14		A	Amber Glass 60ml
1287138	ES16	2	TP14		A	Plastic Tub 500g
1287139	ES17	1	TP15		A	Amber Glass 250ml
1287139	ES17	1	TP15		A	Amber Glass 60ml
1287139	ES17	1	TP15		A	Plastic Tub 500g
1287140	ES18	2	TP15		A	Amber Glass 250ml
1287140	ES18	2	TP15		A	Amber Glass 60ml
1287140	ES18	2	TP15		A	Plastic Tub 500g

Deviations

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Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1287141	ES19	1	TP16		A	Amber Glass 250ml
1287141	ES19	1	TP16		A	Amber Glass 60ml
1287141	ES19	1	TP16		A	Plastic Tub 500g
1287142	ES20	2	TP16		A	Amber Glass 250ml
1287142	ES20	2	TP16		A	Amber Glass 60ml
1287142	ES20	2	TP16		A	Plastic Tub 500g
1287143	ES21	1	TP17		A	Amber Glass 250ml
1287143	ES21	1	TP17		A	Amber Glass 60ml
1287143	ES21	1	TP17		A	Plastic Tub 500g
1287144	ES22	2	TP17		A	Amber Glass 250ml
1287144	ES22	2	TP17		A	Amber Glass 60ml
1287144	ES22	2	TP17		A	Plastic Tub 500g
1287145	ES23	1	TP18		A	Amber Glass 250ml
1287145	ES23	1	TP18		A	Amber Glass 60ml
1287145	ES23	1	TP18		A	Plastic Tub 500g
1287146	ES24	2	TP18		A	Amber Glass 250ml
1287146	ES24	2	TP18		A	Amber Glass 60ml
1287146	ES24	2	TP18		A	Plastic Tub 500g
1287147	ES25	1	TP19		A	Amber Glass 250ml
1287147	ES25	1	TP19		A	Amber Glass 60ml
1287147	ES25	1	TP19		A	Plastic Tub 500g
1287148	ES26	2	TP19		A	Amber Glass 250ml
1287148	ES26	2	TP19		A	Amber Glass 60ml
1287148	ES26	2	TP19		A	Plastic Tub 500g

Deviations

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Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1287149	ES27	1	TP20		A	Amber Glass 250ml
1287149	ES27	1	TP20		A	Amber Glass 60ml
1287149	ES27	1	TP20		A	Plastic Tub 500g
1287150	ES28	2	TP20		A	Amber Glass 250ml
1287150	ES28	2	TP20		A	Amber Glass 60ml
1287150	ES28	2	TP20		A	Plastic Tub 500g
1287151	ES29	1	TP22		A	Amber Glass 250ml
1287151	ES29	1	TP22		A	Amber Glass 60ml
1287151	ES29	1	TP22		A	Plastic Tub 500g
1287152	ES30	2	TP22		A	Amber Glass 250ml
1287152	ES30	2	TP22		A	Amber Glass 60ml
1287152	ES30	2	TP22		A	Plastic Tub 500g
1287153	ES31	1	TP23		A	Amber Glass 250ml
1287153	ES31	1	TP23		A	Amber Glass 60ml
1287153	ES31	1	TP23		A	Plastic Tub 500g
1287154	ES32	2	TP23		A	Amber Glass 250ml
1287154	ES32	2	TP23		A	Amber Glass 60ml
1287154	ES32	2	TP23		A	Plastic Tub 500g
1287155	ES33	1	TP24		A	Amber Glass 250ml
1287155	ES33	1	TP24		A	Amber Glass 60ml
1287155	ES33	1	TP24		A	Plastic Tub 500g
1287156	ES34	2	TP24		A	Amber Glass 250ml
1287156	ES34	2	TP24		A	Amber Glass 60ml
1287156	ES34	2	TP24		A	Plastic Tub 500g

Deviations

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Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1287157	ES35	1	TP25		A	Amber Glass 250ml
1287157	ES35	1	TP25		A	Amber Glass 60ml
1287157	ES35	1	TP25		A	Plastic Tub 500g
1287158	ES36	2	TP25		A	Amber Glass 250ml
1287158	ES36	2	TP25		A	Amber Glass 60ml
1287158	ES36	2	TP25		A	Plastic Tub 500g
1287159	ES37	1	TP26		A	Amber Glass 250ml
1287159	ES37	1	TP26		A	Amber Glass 60ml
1287159	ES37	1	TP26		A	Plastic Tub 500g
1287160	ES38	2	TP26		A	Amber Glass 250ml
1287160	ES38	2	TP26		A	Amber Glass 60ml
1287160	ES38	2	TP26		A	Plastic Tub 500g
1287161	ES39	1	TP27		A	Amber Glass 250ml
1287161	ES39	1	TP27		A	Amber Glass 60ml
1287161	ES39	1	TP27		A	Plastic Tub 500g
1287162	ES40	2	TP27		A	Amber Glass 250ml
1287162	ES40	2	TP27		A	Amber Glass 60ml
1287162	ES40	2	TP27		A	Plastic Tub 500g
1287163	ES41	1	TP28		A	Amber Glass 250ml
1287163	ES41	1	TP28		A	Amber Glass 60ml
1287163	ES41	1	TP28		A	Plastic Tub 500g
1287164	ES42	2	TP28		A	Amber Glass 250ml
1287164	ES42	2	TP28		A	Amber Glass 60ml
1287164	ES42	2	TP28		A	Plastic Tub 500g

Deviations

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Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1287165	ES43	1	TP30		A	Amber Glass 250ml
1287165	ES43	1	TP30		A	Amber Glass 60ml
1287165	ES43	1	TP30		A	Plastic Tub 500g
1287166	ES44	2	TP30		A	Amber Glass 250ml
1287166	ES44	2	TP30		A	Amber Glass 60ml
1287166	ES44	2	TP30		A	Plastic Tub 500g
1287167	ES45	1	TP31		A	Amber Glass 250ml
1287167	ES45	1	TP31		A	Amber Glass 60ml
1287167	ES45	1	TP31		A	Plastic Tub 500g
1287168	ES46	2	TP31		A	Amber Glass 250ml
1287168	ES46	2	TP31		A	Amber Glass 60ml
1287168	ES46	2	TP31		A	Plastic Tub 500g
1287169	ES47	1	TP32		A	Amber Glass 250ml
1287169	ES47	1	TP32		A	Amber Glass 60ml
1287169	ES47	1	TP32		A	Plastic Tub 500g
1287170	ES48	2	TP32		A	Amber Glass 250ml
1287170	ES48	2	TP32		A	Amber Glass 60ml
1287170	ES48	2	TP32		A	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection

Test Methods

SOP	Title	Parameters included	Method summary
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Appendix 8

Waste Classification Report

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.

42MAI-4ANZD-C5B0C

Job name

5811

Description/Comments

Client: Land Development Agency
Engineer: Barrett Mahony

Project

Dundrum Central Development

Site

Dundrum, Dublin 14

Classified by

Name:
Stephen Letch
Company:
Site Investigations Ltd
Date:
14 Oct 2021 13:10 GMT
Telephone:
00353 86817 9449

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: CERTIFIED

Course	Date
Hazardous Waste Classification	09 Oct 2019

Next 3 year Refresher due by Oct 2022

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	WAC Results		Page
					Inert	Non Haz	
1	TP33-0.30	0.30-0.30	Non Hazardous		Fail	Pass	3
2	TP33-1.00	1.00-1.00	Non Hazardous		Pass	Pass	7
3	TP34-0.30	0.30-0.30	Non Hazardous		Fail	Fail	11
4	TP34-0.80	0.80-0.80	Non Hazardous		Pass	Pass	15
5	TP35-0.30	0.30-0.30	Non Hazardous		Fail	Pass	19
6	TP35-1.00	1.00-1.00	Non Hazardous		Pass	Pass	23
7	TP36-0.30	0.30-0.30	Non Hazardous		Fail	Fail	27
8	TP36-0.80	0.80-0.80	Non Hazardous		Pass	Pass	31
9	TP05-0.30	0.30-0.30	Non Hazardous		Fail	Pass	35
10	TP05-0.50	0.50-0.50	Non Hazardous		Pass	Pass	39
11	TP05-1.00	1.00-1.00	Non Hazardous		Pass	Pass	43
12	TP06-0.30	0.30-0.30	Non Hazardous		Fail	Pass	47
13	TP06-1.00	1.00-1.00	Non Hazardous		Pass	Pass	51
14	TP09-0.30	0.30-0.30	Non Hazardous		Pass	Pass	55
15	TP09-1.00	1.00-1.00	Non Hazardous		Pass	Pass	59
16	TP09-1.50	1.50-1.50	Non Hazardous		Pass	Pass	63
17	TP10-0.30	0.30-0.30	Non Hazardous		Fail	Pass	67
18	TP10-1.40	1.40-1.40	Non Hazardous		Pass	Pass	71
19	TP11-0.30	0.30-0.30	Non Hazardous		Fail	Pass	75
20	TP11-1.00	1.00-1.00	Non Hazardous		Pass	Pass	79
21	TP12-0.30	0.30-0.30	Non Hazardous		Fail	Pass	83
22	TP12-1.00	1.00-1.00	Non Hazardous		Pass	Pass	87
23	TP01-0.30	0.30-0.30	Non Hazardous		Fail	Pass	91
24	TP01-1.00	1.00-1.00	Non Hazardous		Pass	Pass	95
25	TP02-0.20	0.20-0.20	Non Hazardous		Fail	Fail	99
26	TP02-1.40	1.40-1.40	Non Hazardous		Fail	Pass	103
27	TP03-0.30	0.30-0.30	Non Hazardous		Fail	Pass	107

#	Sample name	Depth [m]	Classification Result	Hazard properties	WAC Results		Page
					Inert	Non Haz	
28	TP03-1.20	1.20-1.20	Non Hazardous		Fail	Pass	111
29	TP04-0.40	0.40-0.40	Non Hazardous		Fail	Fail	115
30	TP04-1.50	1.50-1.50	Non Hazardous		Pass	Pass	119
31	TP07-0.30	0.30-0.30	Non Hazardous		Fail	Pass	123
32	TP07-1.00	1.00-1.00	Non Hazardous		Pass	Pass	127
33	TP08-0.30	0.30-0.30	Non Hazardous		Fail	Fail	131
34	TP08-1.00	1.00-1.00	Non Hazardous		Pass	Pass	135
35	TP13-0.30	0.30-0.30	Non Hazardous		Pass	Pass	139
36	TP13-1.00	1.00-1.00	Non Hazardous		Pass	Pass	143
37	TP14-0.30	0.30-0.30	Non Hazardous		Fail	Pass	147
38	TP14-1.00	1.00-1.00	Non Hazardous		Pass	Pass	151
39	TP15-0.30	0.30-0.30	Non Hazardous		Fail	Pass	155
40	TP15-1.00	1.00-1.00	Non Hazardous		Pass	Pass	159
41	TP16-0.30	0.30-0.30	Non Hazardous		Fail	Pass	163
42	TP16-0.60	0.60-0.60	Non Hazardous		Pass	Pass	167
43	TP17-0.30	0.30-0.30	Non Hazardous		Fail	Pass	171
44	TP17-0.60	0.60-0.60	Non Hazardous		Pass	Pass	175
45	TP18-0.30	0.30-0.30	Non Hazardous		Fail	Pass	179
46	TP18-1.00	1.00-1.00	Non Hazardous		Pass	Pass	183
47	TP19-0.30	0.30-0.30	Non Hazardous		Fail	Pass	187
48	TP19-0.80	0.80-0.80	Non Hazardous		Fail	Pass	191
49	TP20-0.40	0.40-0.40	Non Hazardous		Pass	Pass	195
50	TP20-0.80	0.80-0.80	Non Hazardous		Pass	Pass	199
51	TP22-0.30	0.30-0.30	Non Hazardous		Fail	Fail	203
52	TP22-1.00	1.00-1.00	Non Hazardous		Pass	Pass	207
53	TP23-0.30	0.30-0.30	Non Hazardous		Fail	Fail	211
54	TP23-0.80	0.80-0.80	Non Hazardous		Pass	Pass	215
55	TP24-0.30	0.30-0.30	Non Hazardous		Fail	Fail	219
56	TP24-1.00	1.00-1.00	Non Hazardous		Fail	Pass	223
57	TP25-0.30	0.30-0.30	Non Hazardous		Fail	Fail	227
58	TP25-1.00	1.00-1.00	Non Hazardous		Pass	Pass	231
59	TP26-0.30	0.30-0.30	Non Hazardous		Pass	Pass	235
60	TP26-1.20	1.20-1.20	Non Hazardous		Pass	Pass	239
61	TP27-0.30	0.30-0.30	Non Hazardous		Fail	Pass	243
62	TP27-1.00	1.00-1.00	Non Hazardous		Pass	Pass	247
63	TP28-0.20	0.20-0.30	Non Hazardous		Fail	Pass	251
64	TP28-1.00	1.00-1.00	Non Hazardous		Pass	Pass	255
65	TP30-0.30	0.30-0.30	Non Hazardous		Fail	Fail	259
66	TP30-0.90	0.90-0.90	Non Hazardous		Pass	Pass	263
67	TP31-0.30	0.30-0.30	Non Hazardous		Fail	Fail	267
68	TP31-1.50	1.50-1.50	Non Hazardous		Pass	Pass	271
69	TP32-0.30	0.30-0.30	Non Hazardous		Fail	Pass	275
70	TP32-1.00	1.00-1.00	Non Hazardous		Pass	Pass	279

Related documents

#	Name	Description
1	HWOL_21-33474-20211014 133848.hwol	.hwol file used to create the Job

WAC results

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate the samples in this Job: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

Report

Created by: Stephen Letch

Created date: 14 Oct 2021 13:10 GMT

Appendices	Page
Appendix A: Classifier defined and non CLP determinands	283
Appendix B: Rationale for selection of metal species	285
Appendix C: Version	286

Classification of sample: TP33-0.30

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

Sample details

Sample name:
TP33-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
13%
(wet weight 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% Wet Weight 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	pH			PH		8.5	pH		8.5	pH	8.5 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		**<LOD**
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		20	mg/kg		17.4	mg/kg	0.00174 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		140	mg/kg	1.117	135.99	mg/kg	0.0136 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.6	mg/kg	1.142	1.59	mg/kg	0.000159 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.8	mg/kg	1.5	4.96	mg/kg	0.000496 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	3	mg/kg		2.61	mg/kg	0.000261 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		28	mg/kg		24.36	mg/kg	0.00244 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		92	mg/kg		80.04	mg/kg	0.008 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.81	mg/kg		0.705	mg/kg	0.0000705 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		54	mg/kg	1.273	59.786	mg/kg	0.00598 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	190	mg/kg		165.3	mg/kg	0.0165 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.78	mg/kg	1.405	0.953	mg/kg	0.0000953 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		180	mg/kg	1.245	194.922	mg/kg	0.0195 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		29	mg/kg	1.462	36.875	mg/kg	0.00369 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		0.44	mg/kg		0.383	mg/kg	0.0000383 %	✓	
24	acenaphthylene		205-917-1	208-96-8		0.1	mg/kg		0.087	mg/kg	0.0000087 %	✓	
25	acenaphthene		201-469-6	83-32-9		0.26	mg/kg		0.226	mg/kg	0.0000226 %	✓	
26	fluorene		201-695-5	86-73-7		0.23	mg/kg		0.2	mg/kg	0.00002 %	✓	
27	phenanthrene		201-581-5	85-01-8		2	mg/kg		1.74	mg/kg	0.000174 %	✓	
28	anthracene		204-371-1	120-12-7		0.33	mg/kg		0.287	mg/kg	0.0000287 %	✓	
29	fluoranthene		205-912-4	206-44-0		2.6	mg/kg		2.262	mg/kg	0.000226 %	✓	
30	pyrene		204-927-3	129-00-0		2.4	mg/kg		2.088	mg/kg	0.000209 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		1.5	mg/kg		1.305	mg/kg	0.000131 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		1.6	mg/kg		1.392	mg/kg	0.000139 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.8	mg/kg		1.566	mg/kg	0.000157 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.65	mg/kg		0.566	mg/kg	0.0000566 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.3	mg/kg		1.131	mg/kg	0.000113 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.87	mg/kg		0.757	mg/kg	0.0000757 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.25	mg/kg		0.218	mg/kg	0.0000218 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		0.91	mg/kg		0.792	mg/kg	0.0000792 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0754 %		

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

WAC results for sample: TP33-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	4.6	3	5
2	LOI (loss on ignition)	%	8.9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	17	100	-
7	pH	pH	8.5	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.079	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.021	0.5	10
13	copper	mg/kg	0.042	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.036	0.5	10
16	nickel	mg/kg	0.019	0.4	10
17	lead	mg/kg	0.008	0.5	10
18	antimony	mg/kg	0.011	0.06	0.7
19	selenium	mg/kg	0.0053	0.1	0.5
20	zinc	mg/kg	0.047	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	5.4	10	150
23	sulphate	mg/kg	86	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	100	500	800
26	TDS (total dissolved solids)	mg/kg	1400	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP33-1.00

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

Sample details

Sample name:
TP33-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
12%
(wet weight 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% Wet Weight 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	pH			PH		8.5	pH		8.5	pH	8.5 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.59	mg/kg	3.22	1.672	mg/kg	0.000167 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		3.2	mg/kg		2.816	mg/kg	0.000282 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		89	mg/kg	1.117	87.445	mg/kg	0.00874 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.8	mg/kg	1.142	2.815	mg/kg	0.000281 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4.5	mg/kg	1.5	5.941	mg/kg	0.000594 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.5	mg/kg		2.2	mg/kg	0.00022 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		25	mg/kg		22	mg/kg	0.0022 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		70	mg/kg		61.6	mg/kg	0.00616 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.19	mg/kg		0.167	mg/kg	0.0000167 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		61	mg/kg	1.273	68.313	mg/kg	0.00683 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	48	mg/kg		42.24	mg/kg	0.00422 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.21	mg/kg	1.405	0.26	mg/kg	0.000026 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		96	mg/kg	1.245	105.153	mg/kg	0.0105 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		22	mg/kg	1.462	28.296	mg/kg	0.00283 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.15	mg/kg		0.132	mg/kg	0.0000132 %	✓	
30	pyrene		204-927-3	129-00-0		0.17	mg/kg		0.15	mg/kg	0.000015 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0445 %		

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

WAC results for sample: TP33-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.81	3	5
2	LOI (loss on ignition)	%	3	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.5	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.014	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.019	0.5	10
13	copper	mg/kg	0.021	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.06	0.5	10
16	nickel	mg/kg	0.014	0.4	10
17	lead	mg/kg	0.0054	0.5	10
18	antimony	mg/kg	0.0058	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	0.055	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.2	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	120	500	800
26	TDS (total dissolved solids)	mg/kg	780	4,000	60,000

Key

User supplied data

Classification of sample: TP34-0.30

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

Sample details

Sample name:
TP34-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
13%
(wet weight 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% Wet Weight 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	pH			PH		8.3	pH		8.3	pH	8.3 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.63	mg/kg	3.22	1.765	mg/kg	0.000176 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		13	mg/kg		11.31	mg/kg	0.00113 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		150	mg/kg	1.117	145.704	mg/kg	0.0146 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.7	mg/kg	1.142	1.69	mg/kg	0.000169 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.8	mg/kg	1.5	4.96	mg/kg	0.000496 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	3.1	mg/kg		2.697	mg/kg	0.00027 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		30	mg/kg		26.1	mg/kg	0.00261 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		93	mg/kg		80.91	mg/kg	0.00809 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.74	mg/kg		0.644	mg/kg	0.0000644 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		57	mg/kg	1.273	63.108	mg/kg	0.00631 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	200	mg/kg		174	mg/kg	0.0174 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.78	mg/kg	1.405	0.953	mg/kg	0.0000953 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		180	mg/kg	1.245	194.922	mg/kg	0.0195 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		33	mg/kg	1.462	41.961	mg/kg	0.0042 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		3	mg/kg		2.61	mg/kg	0.000261 %	✓	
28	anthracene		204-371-1	120-12-7		0.48	mg/kg		0.418	mg/kg	0.0000418 %	✓	
29	fluoranthene		205-912-4	206-44-0		3	mg/kg		2.61	mg/kg	0.000261 %	✓	
30	pyrene		204-927-3	129-00-0		2.7	mg/kg		2.349	mg/kg	0.000235 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		1.3	mg/kg		1.131	mg/kg	0.000113 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		1.6	mg/kg		1.392	mg/kg	0.000139 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.5	mg/kg		1.305	mg/kg	0.000131 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.45	mg/kg		0.391	mg/kg	0.0000391 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.1	mg/kg		0.957	mg/kg	0.0000957 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.64	mg/kg		0.557	mg/kg	0.0000557 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.2	mg/kg		0.174	mg/kg	0.0000174 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		0.75	mg/kg		0.653	mg/kg	0.0000653 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0778 %		

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

WAC results for sample: TP34-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample FAILS the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	5.9	3	5
2	LOI (loss on ignition)	%	8	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	17	100	-
7	pH	pH	8.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.077	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.023	0.5	10
13	copper	mg/kg	0.044	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.026	0.5	10
16	nickel	mg/kg	0.018	0.4	10
17	lead	mg/kg	0.0091	0.5	10
18	antimony	mg/kg	0.015	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	0.075	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	4.9	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	210	500	800
26	TDS (total dissolved solids)	mg/kg	780	4,000	60,000

Key

- User supplied data
- Inert WAC criteria fail
- Non Hazardous WAC criteria fail

Classification of sample: TP34-0.80

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

Sample details

Sample name:
TP34-0.80
Sample Depth:
0.80-0.80 m
Moisture content:
15%
(wet weight 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% Wet Weight 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	pH			PH		8.6	pH		8.6	pH	8.6 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		<LOD
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
5	barium { barium oxide }		215-127-9	1304-28-5		110	mg/kg	1.117	104.393	mg/kg	0.0104 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		3.3	mg/kg	1.142	3.204	mg/kg	0.00032 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4.9	mg/kg	1.5	6.248	mg/kg	0.000625 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.9	mg/kg		2.465	mg/kg	0.000246 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		31	mg/kg		26.35	mg/kg	0.00264 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		48	mg/kg		40.8	mg/kg	0.00408 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		85	mg/kg	1.273	91.945	mg/kg	0.00919 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	41	mg/kg		34.85	mg/kg	0.00349 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.22	mg/kg	1.405	0.263	mg/kg	0.0000263 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		110	mg/kg	1.245	116.381	mg/kg	0.0116 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		34	mg/kg	1.462	42.239	mg/kg	0.00422 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30	pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0485 %		

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

WAC results for sample: TP34-0.80

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.3	3	5
2	LOI (loss on ignition)	%	8	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	<0.0002	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.024	0.5	10
13	copper	mg/kg	0.0086	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.06	0.5	10
16	nickel	mg/kg	0.011	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.0058	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	0.03	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	3.5	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	130	500	800
26	TDS (total dissolved solids)	mg/kg	650	4,000	60,000

Key

User supplied data

Classification of sample: TP35-0.30

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

Sample details

Sample name:
TP35-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
12%
(wet weight 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% Wet Weight 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	pH			PH		8.3	pH		8.3	pH	8.3 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.2	mg/kg	3.22	3.4	mg/kg	0.00034 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		8.2	mg/kg		7.216	mg/kg	0.000722 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		220	mg/kg	1.117	216.156	mg/kg	0.0216 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.8	mg/kg	1.142	2.815	mg/kg	0.000281 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4.7	mg/kg	1.5	6.205	mg/kg	0.00062 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	4.8	mg/kg		4.224	mg/kg	0.000422 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		39	mg/kg		34.32	mg/kg	0.00343 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		130	mg/kg		114.4	mg/kg	0.0114 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.86	mg/kg		0.757	mg/kg	0.0000757 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		69	mg/kg	1.273	77.272	mg/kg	0.00773 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	280	mg/kg		246.4	mg/kg	0.0246 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.78	mg/kg	1.405	0.964	mg/kg	0.0000964 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		280	mg/kg	1.245	306.698	mg/kg	0.0307 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		35	mg/kg	1.462	45.016	mg/kg	0.0045 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		7.3	mg/kg		6.424	mg/kg	0.000642 %	✓	
28	anthracene		204-371-1	120-12-7		1	mg/kg		0.88	mg/kg	0.000088 %	✓	
29	fluoranthene		205-912-4	206-44-0		6.2	mg/kg		5.456	mg/kg	0.000546 %	✓	
30	pyrene		204-927-3	129-00-0		5.5	mg/kg		4.84	mg/kg	0.000484 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		2.4	mg/kg		2.112	mg/kg	0.000211 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		2.9	mg/kg		2.552	mg/kg	0.000255 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		2.9	mg/kg		2.552	mg/kg	0.000255 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		1.1	mg/kg		0.968	mg/kg	0.0000968 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		2	mg/kg		1.76	mg/kg	0.000176 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		1.2	mg/kg		1.056	mg/kg	0.000106 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.37	mg/kg		0.326	mg/kg	0.0000326 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		1.5	mg/kg		1.32	mg/kg	0.000132 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.111 %		

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

WAC results for sample: TP35-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	3.1	3	5
2	LOI (loss on ignition)	%	7.9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	34	100	-
7	pH	pH	8.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.01	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.11	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.011	0.5	10
13	copper	mg/kg	0.038	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.052	0.5	10
16	nickel	mg/kg	0.012	0.4	10
17	lead	mg/kg	0.0051	0.5	10
18	antimony	mg/kg	0.025	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	0.051	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	5	10	150
23	sulphate	mg/kg	11	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	120	500	800
26	TDS (total dissolved solids)	mg/kg	910	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP35-1.00

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

Sample details

Sample name:
TP35-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
11%
(wet weight 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% Wet Weight 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	pH			PH		8.6	pH		8.6	pH	8.6 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		**<LOD**
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		99	mg/kg	1.117	98.375	mg/kg	0.00984 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		3.2	mg/kg	1.142	3.253	mg/kg	0.000325 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		6.1	mg/kg	1.5	8.145	mg/kg	0.000814 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.6	mg/kg		2.314	mg/kg	0.000231 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		26	mg/kg		23.14	mg/kg	0.00231 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		72	mg/kg		64.08	mg/kg	0.00641 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.12	mg/kg		0.107	mg/kg	0.0000107 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		71	mg/kg	1.273	80.415	mg/kg	0.00804 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	42	mg/kg		37.38	mg/kg	0.00374 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.21	mg/kg	1.405	0.263	mg/kg	0.0000263 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		96	mg/kg	1.245	106.348	mg/kg	0.0106 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		22	mg/kg	1.462	28.617	mg/kg	0.00286 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30	pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0469 %		

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

WAC results for sample: TP35-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.86	3	5
2	LOI (loss on ignition)	%	3.2	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.019	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.0027	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.012	0.5	10
13	copper	mg/kg	0.014	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.18	0.5	10
16	nickel	mg/kg	0.017	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	0.034	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	3	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	99	500	800
26	TDS (total dissolved solids)	mg/kg	620	4,000	60,000

Key

User supplied data

Classification of sample: TP36-0.30

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

Sample details

Sample name:
TP36-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
15%
(wet weight 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% Wet Weight 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	pH			PH		8.2	pH		8.2	pH	8.2 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.9	mg/kg	3.22	2.463	mg/kg	0.000246 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		12	mg/kg		10.2	mg/kg	0.00102 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		430	mg/kg	1.117	408.083	mg/kg	0.0408 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.3	mg/kg	1.142	1.262	mg/kg	0.000126 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		7	mg/kg	1.5	8.926	mg/kg	0.000893 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	4.6	mg/kg		3.91	mg/kg	0.000391 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		32	mg/kg		27.2	mg/kg	0.00272 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		180	mg/kg		153	mg/kg	0.0153 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.84	mg/kg		0.714	mg/kg	0.0000714 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		97	mg/kg	1.273	104.925	mg/kg	0.0105 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	680	mg/kg		578	mg/kg	0.0578 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				1.2	mg/kg	1.405	1.433	mg/kg	0.000143 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		320	mg/kg	1.245	338.562	mg/kg	0.0339 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		30	mg/kg	1.462	37.27	mg/kg	0.00373 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		0.31	mg/kg		0.264	mg/kg	0.0000264 %	✓	
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		0.71	mg/kg		0.603	mg/kg	0.0000603 %	✓	
28	anthracene		204-371-1	120-12-7		0.15	mg/kg		0.128	mg/kg	0.0000128 %	✓	
29	fluoranthene		205-912-4	206-44-0		1	mg/kg		0.85	mg/kg	0.000085 %	✓	
30	pyrene		204-927-3	129-00-0		1	mg/kg		0.85	mg/kg	0.000085 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.67	mg/kg		0.57	mg/kg	0.000057 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		0.83	mg/kg		0.706	mg/kg	0.0000706 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.95	mg/kg		0.808	mg/kg	0.0000807 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.37	mg/kg		0.315	mg/kg	0.0000314 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.65	mg/kg		0.553	mg/kg	0.0000553 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.46	mg/kg		0.391	mg/kg	0.0000391 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.12	mg/kg		0.102	mg/kg	0.0000102 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		0.57	mg/kg		0.484	mg/kg	0.0000484 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.17 %		

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

WAC results for sample: TP36-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample FAILS the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	16	3	5
2	LOI (loss on ignition)	%	17	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	7.8	100	-
7	pH	pH	8.2	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.01	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.12	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.014	0.5	10
13	copper	mg/kg	0.029	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.026	0.5	10
16	nickel	mg/kg	0.017	0.4	10
17	lead	mg/kg	0.068	0.5	10
18	antimony	mg/kg	0.016	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	0.073	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	1.9	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	68	500	800
26	TDS (total dissolved solids)	mg/kg	710	4,000	60,000

Key

User supplied data
Inert WAC criteria fail
Non Hazardous WAC criteria fail

Classification of sample: TP36-0.80

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

Sample details

Sample name:
TP36-0.80
Sample Depth:
0.80-0.80 m
Moisture content:
12%
(wet weight 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% Wet Weight 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	pH			PH		8.5	pH		8.5	pH	8.5 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		**<LOD**
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		2.7	mg/kg		2.376	mg/kg	0.000238 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		58	mg/kg	1.117	56.986	mg/kg	0.0057 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		3.1	mg/kg	1.142	3.116	mg/kg	0.000312 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		5.2	mg/kg	1.5	6.865	mg/kg	0.000686 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.3	mg/kg		2.024	mg/kg	0.000202 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		27	mg/kg		23.76	mg/kg	0.00238 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		39	mg/kg		34.32	mg/kg	0.00343 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.11	mg/kg		0.0968	mg/kg	0.00000968 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		54	mg/kg	1.273	60.474	mg/kg	0.00605 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	55	mg/kg		48.4	mg/kg	0.00484 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.37	mg/kg	1.405	0.457	mg/kg	0.0000457 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		110	mg/kg	1.245	120.488	mg/kg	0.012 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		25	mg/kg	1.462	32.154	mg/kg	0.00322 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.14	mg/kg		0.123	mg/kg	0.0000123 %	✓	
30	pyrene		204-927-3	129-00-0		0.12	mg/kg		0.106	mg/kg	0.0000106 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0407 %		

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

WAC results for sample: TP36-0.80

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.59	3	5
2	LOI (loss on ignition)	%	2	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.5	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.007	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.067	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.019	0.5	10
13	copper	mg/kg	0.018	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.13	0.5	10
16	nickel	mg/kg	0.014	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.012	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	0.046	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.1	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	150	500	800
26	TDS (total dissolved solids)	mg/kg	580	4,000	60,000

Key

User supplied data

Classification of sample: TP05-0.30

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

Sample details

Sample name:
TP05-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
5%
(wet weight 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% Wet Weight 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	pH			PH		8.3	pH		8.3	pH	8.3 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		**<LOD**
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		16	mg/kg		15.2	mg/kg	0.00152 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		160	mg/kg	1.117	169.709	mg/kg	0.017 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.9	mg/kg	1.142	3.147	mg/kg	0.000315 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4.5	mg/kg	1.5	6.413	mg/kg	0.000641 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	3.6	mg/kg		3.42	mg/kg	0.000342 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		60	mg/kg		57	mg/kg	0.0057 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		120	mg/kg		114	mg/kg	0.0114 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.58	mg/kg		0.551	mg/kg	0.0000551 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		63	mg/kg	1.273	76.165	mg/kg	0.00762 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	180	mg/kg		171	mg/kg	0.0171 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				1.1	mg/kg	1.405	1.468	mg/kg	0.000147 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		170	mg/kg	1.245	201.021	mg/kg	0.0201 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		32	mg/kg	1.462	44.431	mg/kg	0.00444 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		0.22	mg/kg		0.209	mg/kg	0.0000209 %	✓	
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		0.48	mg/kg		0.456	mg/kg	0.0000456 %	✓	
26	fluorene		201-695-5	86-73-7		0.39	mg/kg		0.371	mg/kg	0.0000371 %	✓	
27	phenanthrene		201-581-5	85-01-8		3.8	mg/kg		3.61	mg/kg	0.000361 %	✓	
28	anthracene		204-371-1	120-12-7		0.58	mg/kg		0.551	mg/kg	0.0000551 %	✓	
29	fluoranthene		205-912-4	206-44-0		4.4	mg/kg		4.18	mg/kg	0.000418 %	✓	
30	pyrene		204-927-3	129-00-0		3.8	mg/kg		3.61	mg/kg	0.000361 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		2	mg/kg		1.9	mg/kg	0.00019 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		2.5	mg/kg		2.375	mg/kg	0.000238 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		2.6	mg/kg		2.47	mg/kg	0.000247 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.84	mg/kg		0.798	mg/kg	0.0000798 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.7	mg/kg		1.615	mg/kg	0.000162 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		1.2	mg/kg		1.14	mg/kg	0.000114 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.33	mg/kg		0.314	mg/kg	0.0000314 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		1.2	mg/kg		1.14	mg/kg	0.000114 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0902 %		

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

WAC results for sample: TP05-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	3.6	3	5
2	LOI (loss on ignition)	%	7.9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	26	100	-
7	pH	pH	8.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.005	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.086	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.067	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.04	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.012	0.06	0.7
19	selenium	mg/kg	0.0063	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	4.4	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	79	500	800
26	TDS (total dissolved solids)	mg/kg	1000	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP05-0.50

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

Sample details

Sample name:
TP05-0.50
Sample Depth:
0.50-0.50 m
Moisture content:
3.6%
(wet weight 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: 3.6% Wet Weight Moisture Correction applied (MC)

#		Determinand	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number									
1		pH PH		8.3	pH		8.3	pH	8.3 pH		
2		boron { diboron trioxide; boric oxide } 005-008-00-8 / 215-125-8 / 1303-86-2		1.1	mg/kg	3.22	3.414	mg/kg	0.000341 %	✓	
3		sulfur { sulfur } 016-094-00-1 / 231-722-6 / 7704-34-9		8	mg/kg		7.712	mg/kg	0.000771 %	✓	
4		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		<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5		barium { barium oxide } 215-127-9 / 1304-28-5		130	mg/kg	1.117	139.921	mg/kg	0.014 %	✓	
6		cadmium { cadmium oxide } 048-002-00-0 / 215-146-2 / 1306-19-0		2.7	mg/kg	1.142	2.973	mg/kg	0.000297 %	✓	
7		molybdenum { molybdenum(VI) oxide } 042-001-00-9 / 215-204-7 / 1313-27-5		4.9	mg/kg	1.5	7.086	mg/kg	0.000709 %	✓	
8		antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex } 051-003-00-9	1	2.9	mg/kg		2.796	mg/kg	0.00028 %	✓	
9		arsenic { arsenic } 033-001-00-X / 231-148-6 / 7440-38-2		31	mg/kg		29.884	mg/kg	0.00299 %	✓	
10		granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm] 029-024-00-X / 231-159-6 / 7440-50-8		110	mg/kg		106.04	mg/kg	0.0106 %	✓	
11		mercury { mercury } 080-001-00-0 / 231-106-7 / 7439-97-6		0.4	mg/kg		0.386	mg/kg	0.0000386 %	✓	
12		nickel { nickel(II) oxide (nickel monoxide) } 028-003-00-2 / 215-215-7 [1] 234-323-5 [2] - [3] / 1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		61	mg/kg	1.273	74.834	mg/kg	0.00748 %	✓	
13		lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6	1	130	mg/kg		125.32	mg/kg	0.0125 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				1.2	mg/kg	1.405	1.625	mg/kg	0.000163 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		140	mg/kg	1.245	167.987	mg/kg	0.0168 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		32	mg/kg	1.462	45.086	mg/kg	0.00451 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		0.17	mg/kg		0.164	mg/kg	0.0000164 %	✓	
24	acenaphthylene		205-917-1	208-96-8		0.11	mg/kg		0.106	mg/kg	0.0000106 %	✓	
25	acenaphthene		201-469-6	83-32-9		0.18	mg/kg		0.174	mg/kg	0.0000174 %	✓	
26	fluorene		201-695-5	86-73-7		0.13	mg/kg		0.125	mg/kg	0.0000125 %	✓	
27	phenanthrene		201-581-5	85-01-8		1.1	mg/kg		1.06	mg/kg	0.000106 %	✓	
28	anthracene		204-371-1	120-12-7		0.27	mg/kg		0.26	mg/kg	0.000026 %	✓	
29	fluoranthene		205-912-4	206-44-0		2.1	mg/kg		2.024	mg/kg	0.000202 %	✓	
30	pyrene		204-927-3	129-00-0		1.8	mg/kg		1.735	mg/kg	0.000174 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.97	mg/kg		0.935	mg/kg	0.0000935 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		1.1	mg/kg		1.06	mg/kg	0.000106 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.4	mg/kg		1.35	mg/kg	0.000135 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.49	mg/kg		0.472	mg/kg	0.0000472 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.87	mg/kg		0.839	mg/kg	0.0000839 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.62	mg/kg		0.598	mg/kg	0.0000598 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.13	mg/kg		0.125	mg/kg	0.0000125 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		0.69	mg/kg		0.665	mg/kg	0.0000665 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0739 %		

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

WAC results for sample: TP05-0.50

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	2.1	3	5
2	LOI (loss on ignition)	%	5.6	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	12	100	-
7	pH	pH	8.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.043	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.031	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.036	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.0069	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.5	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	850	4,000	60,000

Key

User supplied data

Classification of sample: TP05-1.00

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

Sample details

Sample name:
TP05-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
4.1%
(wet weight 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: 4.1% Wet Weight 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	pH			PH		8.2	pH		8.2	pH	8.2 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.1	mg/kg	3.22	3.397	mg/kg	0.00034 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		11	mg/kg		10.549	mg/kg	0.00105 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		150	mg/kg	1.117	160.609	mg/kg	0.0161 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		3	mg/kg	1.142	3.286	mg/kg	0.000329 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4.9	mg/kg	1.5	7.05	mg/kg	0.000705 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	3	mg/kg		2.877	mg/kg	0.000288 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		35	mg/kg		33.565	mg/kg	0.00336 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		100	mg/kg		95.9	mg/kg	0.00959 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.66	mg/kg		0.633	mg/kg	0.0000633 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		65	mg/kg	1.273	79.327	mg/kg	0.00793 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	140	mg/kg		134.26	mg/kg	0.0134 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.95	mg/kg	1.405	1.28	mg/kg	0.000128 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		140	mg/kg	1.245	167.115	mg/kg	0.0167 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		32	mg/kg	1.462	44.852	mg/kg	0.00449 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		1.6	mg/kg		1.534	mg/kg	0.000153 %	✓	
28	anthracene		204-371-1	120-12-7		0.22	mg/kg		0.211	mg/kg	0.0000211 %	✓	
29	fluoranthene		205-912-4	206-44-0		1.9	mg/kg		1.822	mg/kg	0.000182 %	✓	
30	pyrene		204-927-3	129-00-0		1.8	mg/kg		1.726	mg/kg	0.000173 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.93	mg/kg		0.892	mg/kg	0.0000892 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		1.1	mg/kg		1.055	mg/kg	0.000105 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.5	mg/kg		1.439	mg/kg	0.000144 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.44	mg/kg		0.422	mg/kg	0.0000422 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.95	mg/kg		0.911	mg/kg	0.0000911 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.54	mg/kg		0.518	mg/kg	0.0000518 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.1	mg/kg		0.0959	mg/kg	0.00000959 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		0.72	mg/kg		0.69	mg/kg	0.000069 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0769 %		

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

WAC results for sample: TP05-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	2.9	3	5
2	LOI (loss on ignition)	%	5.8	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	12	100	-
7	pH	pH	8.2	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.007	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.016	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.016	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.031	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.0059	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	1.6	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	520	4,000	60,000

Key

User supplied data

Classification of sample: TP06-0.30

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

Sample details

Sample name:
TP06-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
8.3%
(wet weight 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% Wet Weight 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	pH			PH		8.2	pH		8.2	pH	8.2 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.86	mg/kg	3.22	2.539	mg/kg	0.000254 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		7.4	mg/kg		6.786	mg/kg	0.000679 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		140	mg/kg	1.117	143.337	mg/kg	0.0143 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.2	mg/kg	1.142	2.305	mg/kg	0.00023 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.5	mg/kg	1.5	4.815	mg/kg	0.000481 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	3.5	mg/kg		3.21	mg/kg	0.000321 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		31	mg/kg		28.427	mg/kg	0.00284 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		100	mg/kg		91.7	mg/kg	0.00917 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.41	mg/kg		0.376	mg/kg	0.0000376 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		48	mg/kg	1.273	56.014	mg/kg	0.0056 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	140	mg/kg		128.38	mg/kg	0.0128 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.76	mg/kg	1.405	0.979	mg/kg	0.0000979 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		160	mg/kg	1.245	182.624	mg/kg	0.0183 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		29	mg/kg	1.462	38.867	mg/kg	0.00389 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.67	mg/kg		0.614	mg/kg	0.0000614 %	✓	
30	pyrene		204-927-3	129-00-0		0.55	mg/kg		0.504	mg/kg	0.0000504 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.33	mg/kg		0.303	mg/kg	0.0000303 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		0.4	mg/kg		0.367	mg/kg	0.0000367 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.4	mg/kg		0.367	mg/kg	0.0000367 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.13	mg/kg		0.119	mg/kg	0.0000119 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.29	mg/kg		0.266	mg/kg	0.0000266 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0706 %		

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

WAC results for sample: TP06-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	3.9	3	5
2	LOI (loss on ignition)	%	6.8	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	2.8	100	-
7	pH	pH	8.2	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.006	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.061	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.041	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.025	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.01	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.4	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	59	500	800
26	TDS (total dissolved solids)	mg/kg	590	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP06-1.00

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

Sample details

Sample name:
TP06-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
4.5%
(wet weight 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: 4.5% Wet Weight 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	pH			PH		8.8	pH		8.8	pH	8.8 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		**<LOD**
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		1.5	mg/kg		1.433	mg/kg	0.000143 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		120	mg/kg	1.117	127.952	mg/kg	0.0128 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		3.4	mg/kg	1.142	3.709	mg/kg	0.000371 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4.9	mg/kg	1.5	7.02	mg/kg	0.000702 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.4	mg/kg		2.292	mg/kg	0.000229 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		39	mg/kg		37.245	mg/kg	0.00372 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		62	mg/kg		59.21	mg/kg	0.00592 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.1	mg/kg		0.0955	mg/kg	0.00000955 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		57	mg/kg	1.273	69.274	mg/kg	0.00693 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	48	mg/kg		45.84	mg/kg	0.00458 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.28	mg/kg	1.405	0.376	mg/kg	0.0000376 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		90	mg/kg	1.245	106.983	mg/kg	0.0107 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		23	mg/kg	1.462	32.103	mg/kg	0.00321 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30	pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0509 %		

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

WAC results for sample: TP06-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	2.3	3	5
2	LOI (loss on ignition)	%	1.8	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.8	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.017	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.017	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.0079	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.043	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	1.4	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	460	4,000	60,000

Key

User supplied data

Classification of sample: TP09-0.30

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

Sample details

Sample name:
TP09-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
9.2%
(wet weight 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: 9.2% Wet Weight 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	pH			PH		8.3	pH		8.3	pH	8.3 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1	mg/kg	3.22	2.924	mg/kg	0.000292 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		1.2	mg/kg		1.09	mg/kg	0.000109 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		120	mg/kg	1.117	121.654	mg/kg	0.0122 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.9	mg/kg	1.142	3.008	mg/kg	0.000301 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		5.5	mg/kg	1.5	7.492	mg/kg	0.000749 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.9	mg/kg		2.633	mg/kg	0.000263 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		30	mg/kg		27.24	mg/kg	0.00272 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		75	mg/kg		68.1	mg/kg	0.00681 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.41	mg/kg		0.372	mg/kg	0.0000372 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		60	mg/kg	1.273	69.331	mg/kg	0.00693 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	96	mg/kg		87.168	mg/kg	0.00872 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.93	mg/kg	1.405	1.186	mg/kg	0.000119 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		150	mg/kg	1.245	169.53	mg/kg	0.017 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		29	mg/kg	1.462	38.486	mg/kg	0.00385 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.15	mg/kg		0.136	mg/kg	0.0000136 %	✓	
30	pyrene		204-927-3	129-00-0		0.16	mg/kg		0.145	mg/kg	0.0000145 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0614 %		

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

WAC results for sample: TP09-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	2.5	3	5
2	LOI (loss on ignition)	%	6.4	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.021	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.027	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.12	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.0089	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	4.9	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	64	500	800
26	TDS (total dissolved solids)	mg/kg	840	4,000	60,000

Key

User supplied data

Classification of sample: TP09-1.00

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

Sample details

Sample name:
TP09-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
3.8%
(wet weight 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: 3.8% Wet Weight 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	pH			PH		8.5	pH		8.5	pH	8.5 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.46	mg/kg	3.22	1.425	mg/kg	0.000142 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		1.9	mg/kg		1.828	mg/kg	0.000183 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		98	mg/kg	1.117	105.26	mg/kg	0.0105 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.8	mg/kg	1.142	3.077	mg/kg	0.000308 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4.7	mg/kg	1.5	6.783	mg/kg	0.000678 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.1	mg/kg		2.02	mg/kg	0.000202 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		28	mg/kg		26.936	mg/kg	0.00269 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		110	mg/kg		105.82	mg/kg	0.0106 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.21	mg/kg		0.202	mg/kg	0.0000202 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		59	mg/kg	1.273	72.23	mg/kg	0.00722 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	59	mg/kg		56.758	mg/kg	0.00568 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.53	mg/kg	1.405	0.716	mg/kg	0.0000716 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		90	mg/kg	1.245	107.767	mg/kg	0.0108 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		31	mg/kg	1.462	43.587	mg/kg	0.00436 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.12	mg/kg		0.115	mg/kg	0.0000115 %	✓	
30	pyrene		204-927-3	129-00-0		0.13	mg/kg		0.125	mg/kg	0.0000125 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0548 %		

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

WAC results for sample: TP09-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.3	3	5
2	LOI (loss on ignition)	%	2.9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.5	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.006	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.01	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.12	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.2	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	590	4,000	60,000

Key

User supplied data

Classification of sample: TP09-1.50

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

Sample details

Sample name:
TP09-1.50
Sample Depth:
1.50-1.50 m
Moisture content:
9.5%
(wet weight 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: 9.5% Wet Weight 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	pH			PH		8.6	pH		8.6	pH	8.6 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		**<LOD**
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		95	mg/kg	1.117	95.992	mg/kg	0.0096 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.7	mg/kg	1.142	2.791	mg/kg	0.000279 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		5	mg/kg	1.5	6.788	mg/kg	0.000679 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	4	mg/kg		3.62	mg/kg	0.000362 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		60	mg/kg		54.3	mg/kg	0.00543 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		53	mg/kg		47.965	mg/kg	0.0048 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.15	mg/kg		0.136	mg/kg	0.0000136 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		57	mg/kg	1.273	65.647	mg/kg	0.00656 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	220	mg/kg		199.1	mg/kg	0.0199 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.46	mg/kg	1.405	0.585	mg/kg	0.0000585 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		290	mg/kg	1.245	326.675	mg/kg	0.0327 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		29	mg/kg	1.462	38.359	mg/kg	0.00384 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30	pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0858 %		

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

WAC results for sample: TP09-1.50

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.2	3	5
2	LOI (loss on ignition)	%	2.3	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.005	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.0038	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.0073	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.055	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	1.8	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	57	500	800
26	TDS (total dissolved solids)	mg/kg	580	4,000	60,000

Key

User supplied data

Classification of sample: TP10-0.30

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

Sample details

Sample name:
TP10-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
6.5%
(wet weight 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: 6.5% Wet Weight 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	pH			PH		8.5	pH		8.5	pH	8.5 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.93	mg/kg	3.22	2.8	mg/kg	0.00028 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		8.8	mg/kg		8.228	mg/kg	0.000823 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		160	mg/kg	1.117	167.029	mg/kg	0.0167 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.2	mg/kg	1.142	2.35	mg/kg	0.000235 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4.3	mg/kg	1.5	6.032	mg/kg	0.000603 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.8	mg/kg		2.618	mg/kg	0.000262 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		32	mg/kg		29.92	mg/kg	0.00299 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		120	mg/kg		112.2	mg/kg	0.0112 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.56	mg/kg		0.524	mg/kg	0.0000524 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		65	mg/kg	1.273	77.342	mg/kg	0.00773 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	210	mg/kg		196.35	mg/kg	0.0196 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.78	mg/kg	1.405	1.025	mg/kg	0.000102 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		200	mg/kg	1.245	232.762	mg/kg	0.0233 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		63	mg/kg	1.462	86.093	mg/kg	0.00861 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		29	mg/kg		27.115	mg/kg	0.00271 %	✓	
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		0.19	mg/kg		0.178	mg/kg	0.0000178 %	✓	
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		0.27	mg/kg		0.252	mg/kg	0.0000252 %	✓	
26	fluorene		201-695-5	86-73-7		0.2	mg/kg		0.187	mg/kg	0.0000187 %	✓	
27	phenanthrene		201-581-5	85-01-8		2.7	mg/kg		2.525	mg/kg	0.000252 %	✓	
28	anthracene		204-371-1	120-12-7		0.54	mg/kg		0.505	mg/kg	0.0000505 %	✓	
29	fluoranthene		205-912-4	206-44-0		4.4	mg/kg		4.114	mg/kg	0.000411 %	✓	
30	pyrene		204-927-3	129-00-0		3.9	mg/kg		3.646	mg/kg	0.000365 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		2.2	mg/kg		2.057	mg/kg	0.000206 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		2.5	mg/kg		2.338	mg/kg	0.000234 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		3	mg/kg		2.805	mg/kg	0.000281 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		1.1	mg/kg		1.029	mg/kg	0.000103 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		2.1	mg/kg		1.964	mg/kg	0.000196 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		1.4	mg/kg		1.309	mg/kg	0.000131 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.19	mg/kg		0.178	mg/kg	0.0000178 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		1.6	mg/kg		1.496	mg/kg	0.00015 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0979 %		

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 HP 3 can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00271%)

WAC results for sample: TP10-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	3.1	3	5
2	LOI (loss on ignition)	%	6.8	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	29	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	26	100	-
7	pH	pH	8.5	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.005	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.075	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.033	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.053	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	0.0065	0.5	10
18	antimony	mg/kg	0.007	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	4.3	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	65	500	800
26	TDS (total dissolved solids)	mg/kg	720	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP10-1.40

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

Sample details

Sample name:
TP10-1.40
Sample Depth:
1.40-1.40 m
Moisture content:
6.8%
(wet weight 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: 6.8% Wet Weight 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	pH			PH		8.6	pH		8.6	pH	8.6 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1	mg/kg	3.22	3.001	mg/kg	0.0003 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		18	mg/kg		16.776	mg/kg	0.00168 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		190	mg/kg	1.117	197.711	mg/kg	0.0198 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.7	mg/kg	1.142	2.875	mg/kg	0.000287 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		5.6	mg/kg	1.5	7.83	mg/kg	0.000783 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	3.6	mg/kg		3.355	mg/kg	0.000336 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		46	mg/kg		42.872	mg/kg	0.00429 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		350	mg/kg		326.2	mg/kg	0.0326 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.74	mg/kg		0.69	mg/kg	0.000069 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		68	mg/kg	1.273	80.652	mg/kg	0.00807 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	310	mg/kg		288.92	mg/kg	0.0289 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.75	mg/kg	1.405	0.982	mg/kg	0.0000982 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		240	mg/kg	1.245	278.418	mg/kg	0.0278 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		45	mg/kg	1.462	61.298	mg/kg	0.00613 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		**<LOD**
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
23	naphthalene	601-052-00-2	202-049-5	91-20-3		0.18	mg/kg		0.168	mg/kg	0.0000168 %	✓	
24	acenaphthylene		205-917-1	208-96-8		0.1	mg/kg		0.0932	mg/kg	0.00000932 %	✓	
25	acenaphthene		201-469-6	83-32-9		0.39	mg/kg		0.363	mg/kg	0.0000363 %	✓	
26	fluorene		201-695-5	86-73-7		0.19	mg/kg		0.177	mg/kg	0.0000177 %	✓	
27	phenanthrene		201-581-5	85-01-8		2.5	mg/kg		2.33	mg/kg	0.000233 %	✓	
28	anthracene		204-371-1	120-12-7		0.74	mg/kg		0.69	mg/kg	0.000069 %	✓	
29	fluoranthene		205-912-4	206-44-0		9.4	mg/kg		8.761	mg/kg	0.000876 %	✓	
30	pyrene		204-927-3	129-00-0		9.5	mg/kg		8.854	mg/kg	0.000885 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		5.3	mg/kg		4.94	mg/kg	0.000494 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		5.1	mg/kg		4.753	mg/kg	0.000475 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		8.6	mg/kg		8.015	mg/kg	0.000802 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		2.7	mg/kg		2.516	mg/kg	0.000252 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		6.9	mg/kg		6.431	mg/kg	0.000643 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		5.1	mg/kg		4.753	mg/kg	0.000475 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.79	mg/kg		0.736	mg/kg	0.0000736 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		4.6	mg/kg		4.287	mg/kg	0.000429 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.138 %		

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

WAC results for sample: TP10-1.40

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	2.5	3	5
2	LOI (loss on ignition)	%	6.3	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	62	100	-
7	pH	pH	8.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.005	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.044	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.027	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.043	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	0.0065	0.5	10
18	antimony	mg/kg	0.0051	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.7	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	66	500	800
26	TDS (total dissolved solids)	mg/kg	590	4,000	60,000

Key

User supplied data

Classification of sample: TP11-0.30

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

Sample details

Sample name:
TP11-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
6.5%
(wet weight 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: 6.5% Wet Weight 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	pH			PH		8.4	pH		8.4	pH	8.4 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.95	mg/kg	3.22	2.86	mg/kg	0.000286 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		5.5	mg/kg		5.143	mg/kg	0.000514 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		150	mg/kg	1.117	156.59	mg/kg	0.0157 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.4	mg/kg	1.142	2.563	mg/kg	0.000256 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		5	mg/kg	1.5	7.013	mg/kg	0.000701 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	4.3	mg/kg		4.021	mg/kg	0.000402 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		32	mg/kg		29.92	mg/kg	0.00299 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		120	mg/kg		112.2	mg/kg	0.0112 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.54	mg/kg		0.505	mg/kg	0.0000505 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		54	mg/kg	1.273	64.253	mg/kg	0.00643 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	240	mg/kg		224.4	mg/kg	0.0224 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.8	mg/kg	1.405	1.051	mg/kg	0.000105 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		160	mg/kg	1.245	186.209	mg/kg	0.0186 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		30	mg/kg	1.462	40.997	mg/kg	0.0041 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		0.78	mg/kg		0.729	mg/kg	0.0000729 %	✓	
28	anthracene		204-371-1	120-12-7		0.14	mg/kg		0.131	mg/kg	0.0000131 %	✓	
29	fluoranthene		205-912-4	206-44-0		1.2	mg/kg		1.122	mg/kg	0.000112 %	✓	
30	pyrene		204-927-3	129-00-0		1.1	mg/kg		1.029	mg/kg	0.000103 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.56	mg/kg		0.524	mg/kg	0.0000524 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		0.63	mg/kg		0.589	mg/kg	0.0000589 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.85	mg/kg		0.795	mg/kg	0.0000795 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.19	mg/kg		0.178	mg/kg	0.0000178 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.59	mg/kg		0.552	mg/kg	0.0000552 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.33	mg/kg		0.309	mg/kg	0.0000309 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.13	mg/kg		0.122	mg/kg	0.0000122 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		0.44	mg/kg		0.411	mg/kg	0.0000411 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0857 %		

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

WAC results for sample: TP11-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	4.2	3	5
2	LOI (loss on ignition)	%	7.1	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	6.9	100	-
7	pH	pH	8.4	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.024	0.5	2
10	barium	mg/kg	0.059	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0057	0.5	10
13	copper	mg/kg	0.042	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.047	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.0073	0.06	0.7
19	selenium	mg/kg	0.0057	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	6.4	10	150
23	sulphate	mg/kg	28	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	63	500	800
26	TDS (total dissolved solids)	mg/kg	2300	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP11-1.00

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

Sample details

Sample name:
TP11-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
11%
(wet weight 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% Wet Weight 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	pH			PH		8.5	pH		8.5	pH	8.5 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.44	mg/kg	3.22	1.261	mg/kg	0.000126 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		110	mg/kg	1.117	109.306	mg/kg	0.0109 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2	mg/kg	1.142	2.033	mg/kg	0.000203 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		5	mg/kg	1.5	6.676	mg/kg	0.000668 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb_2O_4), pentoxide (Sb_2O_5), trisulphide (Sb_2S_3), pentasulphide (Sb_2S_5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		16	mg/kg		14.24	mg/kg	0.00142 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		37	mg/kg		32.93	mg/kg	0.00329 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.14	mg/kg		0.125	mg/kg	0.0000125 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		37	mg/kg	1.273	41.906	mg/kg	0.00419 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	43	mg/kg		38.27	mg/kg	0.00383 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.4	mg/kg	1.405	0.5	mg/kg	0.00005 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		120	mg/kg	1.245	132.935	mg/kg	0.0133 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		29	mg/kg	1.462	37.723	mg/kg	0.00377 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30	pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										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

WAC results for sample: TP11-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.84	3	5
2	LOI (loss on ignition)	%	3.1	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.5	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.0042	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.014	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.095	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	4.2	10	150
23	sulphate	mg/kg	20	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	190	500	800
26	TDS (total dissolved solids)	mg/kg	710	4,000	60,000

Key

User supplied data

Classification of sample: TP12-0.30

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

Sample details

Sample name:
TP12-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
6.6%
(wet weight 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: 6.6% Wet Weight 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	pH			PH		8.2	pH		8.2	pH	8.2 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.4	mg/kg	3.22	4.21	mg/kg	0.000421 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		8.3	mg/kg		7.752	mg/kg	0.000775 %	✓	
4	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				0.5	mg/kg	1.884	0.88	mg/kg	0.000088 %	✓	
5	barium { barium oxide }		215-127-9	1304-28-5		130	mg/kg	1.117	135.566	mg/kg	0.0136 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.1	mg/kg	1.142	2.241	mg/kg	0.000224 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.7	mg/kg	1.5	5.184	mg/kg	0.000518 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.7	mg/kg		2.522	mg/kg	0.000252 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		29	mg/kg		27.086	mg/kg	0.00271 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		91	mg/kg		84.994	mg/kg	0.0085 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.43	mg/kg		0.402	mg/kg	0.0000402 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		54	mg/kg	1.273	64.184	mg/kg	0.00642 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	150	mg/kg		140.1	mg/kg	0.014 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.96	mg/kg	1.405	1.26	mg/kg	0.000126 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		140	mg/kg	1.245	162.759	mg/kg	0.0163 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		32	mg/kg	1.462	43.683	mg/kg	0.00437 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		0.23	mg/kg		0.215	mg/kg	0.0000215 %	✓	
24	acenaphthylene		205-917-1	208-96-8		0.35	mg/kg		0.327	mg/kg	0.0000327 %	✓	
25	acenaphthene		201-469-6	83-32-9		0.12	mg/kg		0.112	mg/kg	0.0000112 %	✓	
26	fluorene		201-695-5	86-73-7		0.19	mg/kg		0.177	mg/kg	0.0000177 %	✓	
27	phenanthrene		201-581-5	85-01-8		2.8	mg/kg		2.615	mg/kg	0.000262 %	✓	
28	anthracene		204-371-1	120-12-7		0.64	mg/kg		0.598	mg/kg	0.0000598 %	✓	
29	fluoranthene		205-912-4	206-44-0		4.1	mg/kg		3.829	mg/kg	0.000383 %	✓	
30	pyrene		204-927-3	129-00-0		3.2	mg/kg		2.989	mg/kg	0.000299 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		1.8	mg/kg		1.681	mg/kg	0.000168 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		1.8	mg/kg		1.681	mg/kg	0.000168 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		2.2	mg/kg		2.055	mg/kg	0.000205 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.7	mg/kg		0.654	mg/kg	0.0000654 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.5	mg/kg		1.401	mg/kg	0.00014 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		1.1	mg/kg		1.027	mg/kg	0.000103 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.24	mg/kg		0.224	mg/kg	0.0000224 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		1	mg/kg		0.934	mg/kg	0.0000934 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0715 %		

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

WAC results for sample: TP12-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	4.9	3	5
2	LOI (loss on ignition)	%	8.8	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	22	100	-
7	pH	pH	8.2	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.017	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.033	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.042	0.5	10
16	nickel	mg/kg	0.0057	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.7	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	64	500	800
26	TDS (total dissolved solids)	mg/kg	1200	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP12-1.00

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

Sample details

Sample name:
TP12-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
5.9%
(wet weight 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: 5.9% Wet Weight 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	pH			PH		8.6	pH		8.6	pH	8.6 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		**<LOD**
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		1.9	mg/kg		1.788	mg/kg	0.000179 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		79	mg/kg	1.117	83	mg/kg	0.0083 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2	mg/kg	1.142	2.15	mg/kg	0.000215 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.2	mg/kg	1.5	4.517	mg/kg	0.000452 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb_2O_4), pentoxide (Sb_2O_5), trisulphide (Sb_2S_3), pentasulphide (Sb_2S_5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		23	mg/kg		21.643	mg/kg	0.00216 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		37	mg/kg		34.817	mg/kg	0.00348 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.16	mg/kg		0.151	mg/kg	0.0000151 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		41	mg/kg	1.273	49.098	mg/kg	0.00491 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	79	mg/kg		74.339	mg/kg	0.00743 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.32	mg/kg	1.405	0.423	mg/kg	0.0000423 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		83	mg/kg	1.245	97.216	mg/kg	0.00972 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		21	mg/kg	1.462	28.882	mg/kg	0.00289 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.23	mg/kg		0.216	mg/kg	0.0000216 %	✓	
30	pyrene		204-927-3	129-00-0		0.26	mg/kg		0.245	mg/kg	0.0000245 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.13	mg/kg		0.122	mg/kg	0.0000122 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		0.18	mg/kg		0.169	mg/kg	0.0000169 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.29	mg/kg		0.273	mg/kg	0.0000273 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.1	mg/kg		0.0941	mg/kg	0.00000941 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.22	mg/kg		0.207	mg/kg	0.0000207 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0416 %		

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

WAC results for sample: TP12-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	2	3	5
2	LOI (loss on ignition)	%	3.2	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.014	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.017	0.5	2
10	barium	mg/kg	0.052	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0061	0.5	10
13	copper	mg/kg	0.018	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.05	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.0055	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.3	10	150
23	sulphate	mg/kg	140	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	61	500	800
26	TDS (total dissolved solids)	mg/kg	780	4,000	60,000

Key

User supplied data

Classification of sample: TP01-0.30

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

Sample details

Sample name:
TP01-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
7.9%
(wet weight 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: 7.9% Wet Weight 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	pH			PH		8.2	pH		8.2	pH	8.2 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1	mg/kg	3.22	2.966	mg/kg	0.000297 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		6.3	mg/kg		5.802	mg/kg	0.00058 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		140	mg/kg	1.117	143.962	mg/kg	0.0144 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2	mg/kg	1.142	2.104	mg/kg	0.00021 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.5	mg/kg	1.5	4.836	mg/kg	0.000484 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	3.3	mg/kg		3.039	mg/kg	0.000304 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		28	mg/kg		25.788	mg/kg	0.00258 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		89	mg/kg		81.969	mg/kg	0.0082 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.72	mg/kg		0.663	mg/kg	0.0000663 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		43	mg/kg	1.273	50.398	mg/kg	0.00504 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	220	mg/kg		202.62	mg/kg	0.0203 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.97	mg/kg	1.405	1.255	mg/kg	0.000126 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		190	mg/kg	1.245	217.812	mg/kg	0.0218 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		25	mg/kg	1.462	33.652	mg/kg	0.00337 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		23	mg/kg		21.183	mg/kg	0.00212 %	✓	
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		0.33	mg/kg		0.304	mg/kg	0.0000304 %	✓	
24	acenaphthylene		205-917-1	208-96-8		0.1	mg/kg		0.0921	mg/kg	0.00000921 %	✓	
25	acenaphthene		201-469-6	83-32-9		0.23	mg/kg		0.212	mg/kg	0.0000212 %	✓	
26	fluorene		201-695-5	86-73-7		0.19	mg/kg		0.175	mg/kg	0.0000175 %	✓	
27	phenanthrene		201-581-5	85-01-8		2	mg/kg		1.842	mg/kg	0.000184 %	✓	
28	anthracene		204-371-1	120-12-7		0.3	mg/kg		0.276	mg/kg	0.0000276 %	✓	
29	fluoranthene		205-912-4	206-44-0		2.6	mg/kg		2.395	mg/kg	0.000239 %	✓	
30	pyrene		204-927-3	129-00-0		2.3	mg/kg		2.118	mg/kg	0.000212 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		1.3	mg/kg		1.197	mg/kg	0.00012 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		1.4	mg/kg		1.289	mg/kg	0.000129 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.8	mg/kg		1.658	mg/kg	0.000166 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.56	mg/kg		0.516	mg/kg	0.0000516 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.2	mg/kg		1.105	mg/kg	0.000111 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.79	mg/kg		0.728	mg/kg	0.0000728 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.21	mg/kg		0.193	mg/kg	0.0000193 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		0.86	mg/kg		0.792	mg/kg	0.0000792 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0815 %		

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 HP 3 can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00212%)

WAC results for sample: TP01-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	3.5	3	5
2	LOI (loss on ignition)	%	6.9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	23	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	16	100	-
7	pH	pH	8.2	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.004	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.11	0.5	2
10	barium	mg/kg	0.064	20	100
11	cadmium	mg/kg	0.002	0.04	1
12	chromium	mg/kg	0.0085	0.5	10
13	copper	mg/kg	0.049	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.056	0.5	10
16	nickel	mg/kg	0.0076	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.023	0.06	0.7
19	selenium	mg/kg	0.012	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.9	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	2500	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP01-1.00

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

Sample details

Sample name:
TP01-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
3.9%
(wet weight 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: 3.9% Wet Weight 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	pH			PH		8.3	pH		8.3	pH	8.3 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.98	mg/kg	3.22	3.032	mg/kg	0.000303 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		2.6	mg/kg		2.499	mg/kg	0.00025 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		120	mg/kg	1.117	128.755	mg/kg	0.0129 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.7	mg/kg	1.142	2.964	mg/kg	0.000296 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		5.9	mg/kg	1.5	8.506	mg/kg	0.000851 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	3.1	mg/kg		2.979	mg/kg	0.000298 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		30	mg/kg		28.83	mg/kg	0.00288 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		70	mg/kg		67.27	mg/kg	0.00673 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.76	mg/kg		0.73	mg/kg	0.000073 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		57	mg/kg	1.273	69.709	mg/kg	0.00697 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	160	mg/kg		153.76	mg/kg	0.0154 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.66	mg/kg	1.405	0.891	mg/kg	0.0000891 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		110	mg/kg	1.245	131.579	mg/kg	0.0132 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		31	mg/kg	1.462	43.541	mg/kg	0.00435 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.12	mg/kg		0.115	mg/kg	0.0000115 %	✓	
30	pyrene		204-927-3	129-00-0		0.11	mg/kg		0.106	mg/kg	0.0000106 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0659 %		

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

WAC results for sample: TP01-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	2.3	3	5
2	LOI (loss on ignition)	%	4.7	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.006	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.034	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	0.0022	0.04	1
12	chromium	mg/kg	0.0056	0.5	10
13	copper	mg/kg	0.02	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.48	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.018	0.06	0.7
19	selenium	mg/kg	0.0099	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.4	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	1100	4,000	60,000

Key

User supplied data

Classification of sample: TP02-0.20

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

Sample details

Sample name:
TP02-0.20
Sample Depth:
0.20-0.20 m
Moisture content:
4.5%
(wet weight 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: 4.5% Wet Weight 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		pH			PH		8.3	pH		8.3	pH	8.3 pH		
2		boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1	mg/kg	3.22	3.075	mg/kg	0.000307 %	✓	
3		sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		120	mg/kg		114.6	mg/kg	0.0115 %	✓	
4		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				0.5	mg/kg	1.884	0.9	mg/kg	0.00009 %	✓	
5		barium { barium oxide }		215-127-9	1304-28-5		210	mg/kg	1.117	223.915	mg/kg	0.0224 %	✓	
6		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.5	mg/kg	1.142	1.636	mg/kg	0.000164 %	✓	
7		molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4.5	mg/kg	1.5	6.447	mg/kg	0.000645 %	✓	
8		antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	3	mg/kg		2.865	mg/kg	0.000287 %	✓	
9		arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		31	mg/kg		29.605	mg/kg	0.00296 %	✓	
10		granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		86	mg/kg		82.13	mg/kg	0.00821 %	✓	
11		mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.43	mg/kg		0.411	mg/kg	0.0000411 %	✓	
12		nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		56	mg/kg	1.273	68.058	mg/kg	0.00681 %	✓	
13		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	410	mg/kg		391.55	mg/kg	0.0392 %	✓	

#	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	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	1.342	mg/kg	0.000134 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		250	mg/kg	1.245	297.175	mg/kg	0.0297 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		22	mg/kg	1.462	30.707	mg/kg	0.00307 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.5	mg/kg		0.478	mg/kg	0.0000477 %	✓	
30	pyrene		204-927-3	129-00-0		0.43	mg/kg		0.411	mg/kg	0.0000411 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.127 %		

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

WAC results for sample: TP02-0.20

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample FAILS the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	15	3	5
2	LOI (loss on ignition)	%	14	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.1	0.5	2
10	barium	mg/kg	0.13	20	100
11	cadmium	mg/kg	0.0021	0.04	1
12	chromium	mg/kg	0.0056	0.5	10
13	copper	mg/kg	0.04	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.049	0.5	10
16	nickel	mg/kg	0.011	0.4	10
17	lead	mg/kg	0.019	0.5	10
18	antimony	mg/kg	0.018	0.06	0.7
19	selenium	mg/kg	0.012	0.1	0.5
20	zinc	mg/kg	0.034	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	1.6	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	55	500	800
26	TDS (total dissolved solids)	mg/kg	1900	4,000	60,000

Key

- User supplied data
- Inert WAC criteria fail
- Non Hazardous WAC criteria fail

Classification of sample: TP02-1.40

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

Sample details

Sample name:
TP02-1.40
Sample Depth:
1.40-1.40 m
Moisture content:
6.9%
(wet weight 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: 6.9% Wet Weight 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	pH			PH		8.6	pH		8.6	pH	8.6 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.94	mg/kg	3.22	2.818	mg/kg	0.000282 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		9.1	mg/kg		8.472	mg/kg	0.000847 %	✓	
4	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				0.5	mg/kg	1.884	0.877	mg/kg	0.0000877 %	✓	
5	barium { barium oxide }		215-127-9	1304-28-5		100	mg/kg	1.117	103.947	mg/kg	0.0104 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.2	mg/kg	1.142	1.276	mg/kg	0.000128 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.9	mg/kg	1.5	5.447	mg/kg	0.000545 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2	mg/kg		1.862	mg/kg	0.000186 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		25	mg/kg		23.275	mg/kg	0.00233 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		36	mg/kg		33.516	mg/kg	0.00335 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.2	mg/kg		0.186	mg/kg	0.0000186 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		36	mg/kg	1.273	42.652	mg/kg	0.00427 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	260	mg/kg		242.06	mg/kg	0.0242 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.52	mg/kg	1.405	0.68	mg/kg	0.000068 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		81	mg/kg	1.245	93.865	mg/kg	0.00939 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		15	mg/kg	1.462	20.411	mg/kg	0.00204 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		0.29	mg/kg		0.27	mg/kg	0.000027 %	✓	
24	acenaphthylene		205-917-1	208-96-8		0.13	mg/kg		0.121	mg/kg	0.0000121 %	✓	
25	acenaphthene		201-469-6	83-32-9		0.84	mg/kg		0.782	mg/kg	0.0000782 %	✓	
26	fluorene		201-695-5	86-73-7		0.62	mg/kg		0.577	mg/kg	0.0000577 %	✓	
27	phenanthrene		201-581-5	85-01-8		5.6	mg/kg		5.214	mg/kg	0.000521 %	✓	
28	anthracene		204-371-1	120-12-7		1.5	mg/kg		1.396	mg/kg	0.00014 %	✓	
29	fluoranthene		205-912-4	206-44-0		7.5	mg/kg		6.983	mg/kg	0.000698 %	✓	
30	pyrene		204-927-3	129-00-0		6.1	mg/kg		5.679	mg/kg	0.000568 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		2.5	mg/kg		2.328	mg/kg	0.000233 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		2.3	mg/kg		2.141	mg/kg	0.000214 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		2.7	mg/kg		2.514	mg/kg	0.000251 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.9	mg/kg		0.838	mg/kg	0.0000838 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		2.2	mg/kg		2.048	mg/kg	0.000205 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		2.2	mg/kg		2.048	mg/kg	0.000205 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		1.4	mg/kg		1.303	mg/kg	0.00013 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		0.26	mg/kg		0.242	mg/kg	0.0000242 %	✓	
39	coronene		205-881-7	191-07-1		1.3	mg/kg		1.21	mg/kg	0.000121 %	✓	
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0628 %		

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

WAC results for sample: TP02-1.40

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	4.6	3	5
2	LOI (loss on ignition)	%	5.7	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	38	100	-
7	pH	pH	8.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.007	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.013	0.5	2
10	barium	mg/kg	0.13	20	100
11	cadmium	mg/kg	0.0017	0.04	1
12	chromium	mg/kg	0.025	0.5	10
13	copper	mg/kg	0.18	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.23	0.5	10
16	nickel	mg/kg	0.02	0.4	10
17	lead	mg/kg	0.0052	0.5	10
18	antimony	mg/kg	0.011	0.06	0.7
19	selenium	mg/kg	0.019	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	67	800	15,000
22	fluoride	mg/kg	2.2	10	150
23	sulphate	mg/kg	150	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	53	500	800
26	TDS (total dissolved solids)	mg/kg	4200	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP03-0.30

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

Sample details

Sample name:
TP03-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
7.2%
(wet weight 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: 7.2% Wet Weight 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	pH			PH		8.4	pH		8.4	pH	8.4 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.4	mg/kg	3.22	4.183	mg/kg	0.000418 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		9.4	mg/kg		8.723	mg/kg	0.000872 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		130	mg/kg	1.117	134.695	mg/kg	0.0135 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.8	mg/kg	1.142	1.908	mg/kg	0.000191 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.3	mg/kg	1.5	4.594	mg/kg	0.000459 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.6	mg/kg		2.413	mg/kg	0.000241 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		22	mg/kg		20.416	mg/kg	0.00204 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		64	mg/kg		59.392	mg/kg	0.00594 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.53	mg/kg		0.492	mg/kg	0.0000492 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		39	mg/kg	1.273	46.058	mg/kg	0.00461 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	210	mg/kg		194.88	mg/kg	0.0195 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.93	mg/kg	1.405	1.213	mg/kg	0.000121 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		150	mg/kg	1.245	173.264	mg/kg	0.0173 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		23	mg/kg	1.462	31.195	mg/kg	0.00312 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		0.74	mg/kg		0.687	mg/kg	0.0000687 %	✓	
24	acenaphthylene		205-917-1	208-96-8		0.14	mg/kg		0.13	mg/kg	0.000013 %	✓	
25	acenaphthene		201-469-6	83-32-9		1.6	mg/kg		1.485	mg/kg	0.000148 %	✓	
26	fluorene		201-695-5	86-73-7		1.2	mg/kg		1.114	mg/kg	0.000111 %	✓	
27	phenanthrene		201-581-5	85-01-8		11	mg/kg		10.208	mg/kg	0.00102 %	✓	
28	anthracene		204-371-1	120-12-7		1.6	mg/kg		1.485	mg/kg	0.000148 %	✓	
29	fluoranthene		205-912-4	206-44-0		11	mg/kg		10.208	mg/kg	0.00102 %	✓	
30	pyrene		204-927-3	129-00-0		9.1	mg/kg		8.445	mg/kg	0.000844 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		4.1	mg/kg		3.805	mg/kg	0.00038 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		4.2	mg/kg		3.898	mg/kg	0.00039 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		5	mg/kg		4.64	mg/kg	0.000464 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		1.7	mg/kg		1.578	mg/kg	0.000158 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		3.5	mg/kg		3.248	mg/kg	0.000325 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		2.6	mg/kg		2.413	mg/kg	0.000241 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.75	mg/kg		0.696	mg/kg	0.0000696 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		2.7	mg/kg		2.506	mg/kg	0.000251 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0752 %		

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

WAC results for sample: TP03-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	4.5	3	5
2	LOI (loss on ignition)	%	8.6	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	61	100	-
7	pH	pH	8.4	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.061	0.5	2
10	barium	mg/kg	0.085	20	100
11	cadmium	mg/kg	0.0016	0.04	1
12	chromium	mg/kg	0.0058	0.5	10
13	copper	mg/kg	0.043	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.042	0.5	10
16	nickel	mg/kg	0.0079	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.016	0.06	0.7
19	selenium	mg/kg	0.0085	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	1.9	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	57	500	800
26	TDS (total dissolved solids)	mg/kg	1400	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP03-1.20

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

Sample details

Sample name:
TP03-1.20
Sample Depth:
1.20-1.20 m
Moisture content:
6.8%
(wet weight 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: 6.8% Wet Weight 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	pH			PH		8.4	pH		8.4	pH	8.4 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.99	mg/kg	3.22	2.971	mg/kg	0.000297 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		19	mg/kg		17.708	mg/kg	0.00177 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		110	mg/kg	1.117	114.464	mg/kg	0.0114 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.1	mg/kg	1.142	1.171	mg/kg	0.000117 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.5	mg/kg	1.5	4.894	mg/kg	0.000489 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2	mg/kg		1.864	mg/kg	0.000186 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		21	mg/kg		19.572	mg/kg	0.00196 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		61	mg/kg		56.852	mg/kg	0.00569 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.36	mg/kg		0.336	mg/kg	0.0000336 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		34	mg/kg	1.273	40.326	mg/kg	0.00403 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	150	mg/kg		139.8	mg/kg	0.014 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.61	mg/kg	1.405	0.799	mg/kg	0.0000799 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		120	mg/kg	1.245	139.209	mg/kg	0.0139 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		16	mg/kg	1.462	21.795	mg/kg	0.00218 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		160	mg/kg		149.12	mg/kg	0.0149 %	✓	
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		0.3	mg/kg		0.28	mg/kg	0.000028 %	✓	
24	acenaphthylene		205-917-1	208-96-8		0.68	mg/kg		0.634	mg/kg	0.0000634 %	✓	
25	acenaphthene		201-469-6	83-32-9		0.59	mg/kg		0.55	mg/kg	0.000055 %	✓	
26	fluorene		201-695-5	86-73-7		1	mg/kg		0.932	mg/kg	0.0000932 %	✓	
27	phenanthrene		201-581-5	85-01-8		11	mg/kg		10.252	mg/kg	0.00103 %	✓	
28	anthracene		204-371-1	120-12-7		1.9	mg/kg		1.771	mg/kg	0.000177 %	✓	
29	fluoranthene		205-912-4	206-44-0		16	mg/kg		14.912	mg/kg	0.00149 %	✓	
30	pyrene		204-927-3	129-00-0		13	mg/kg		12.116	mg/kg	0.00121 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		6.2	mg/kg		5.778	mg/kg	0.000578 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		6.2	mg/kg		5.778	mg/kg	0.000578 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		6.8	mg/kg		6.338	mg/kg	0.000634 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		2.5	mg/kg		2.33	mg/kg	0.000233 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		5.5	mg/kg		5.126	mg/kg	0.000513 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		3.3	mg/kg		3.076	mg/kg	0.000308 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.74	mg/kg		0.69	mg/kg	0.000069 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		3	mg/kg		2.796	mg/kg	0.00028 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols		P1186		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
42		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]		<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
										Total:	0.0786 %		

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 HP 3 can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0149%)

WAC results for sample: TP03-1.20

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	4.9	3	5
2	LOI (loss on ignition)	%	7.7	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	160	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	79	100	-
7	pH	pH	8.4	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.05	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	0.0017	0.04	1
12	chromium	mg/kg	0.006	0.5	10
13	copper	mg/kg	0.045	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.18	0.5	10
16	nickel	mg/kg	0.015	0.4	10
17	lead	mg/kg	0.01	0.5	10
18	antimony	mg/kg	0.022	0.06	0.7
19	selenium	mg/kg	0.0098	0.1	0.5
20	zinc	mg/kg	0.026	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	1.6	10	150
23	sulphate	mg/kg	14	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	79	500	800
26	TDS (total dissolved solids)	mg/kg	980	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP04-0.40

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

Sample details

Sample name:
TP04-0.40
Sample Depth:
0.40-0.40 m
Moisture content:
3.6%
(wet weight 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: 3.6% Wet Weight 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	pH			PH		8.5	pH		8.5	pH	8.5 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.45	mg/kg	3.22	1.397	mg/kg	0.00014 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		4	mg/kg		3.856	mg/kg	0.000386 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		150	mg/kg	1.117	161.447	mg/kg	0.0161 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.3	mg/kg	1.142	2.533	mg/kg	0.000253 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4.7	mg/kg	1.5	6.797	mg/kg	0.00068 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.5	mg/kg		2.41	mg/kg	0.000241 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		25	mg/kg		24.1	mg/kg	0.00241 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		63	mg/kg		60.732	mg/kg	0.00607 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.33	mg/kg		0.318	mg/kg	0.0000318 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		54	mg/kg	1.273	66.246	mg/kg	0.00662 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	130	mg/kg		125.32	mg/kg	0.0125 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				1.3	mg/kg	1.405	1.761	mg/kg	0.000176 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		130	mg/kg	1.245	155.988	mg/kg	0.0156 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		23	mg/kg	1.462	32.406	mg/kg	0.00324 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.42	mg/kg		0.405	mg/kg	0.0000405 %	✓	
30	pyrene		204-927-3	129-00-0		0.42	mg/kg		0.405	mg/kg	0.0000405 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.3	mg/kg		0.289	mg/kg	0.0000289 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		0.32	mg/kg		0.308	mg/kg	0.0000308 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.38	mg/kg		0.366	mg/kg	0.0000366 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.16	mg/kg		0.154	mg/kg	0.0000154 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.2	mg/kg		0.193	mg/kg	0.0000193 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0661 %		

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

WAC results for sample: TP04-0.40

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample FAILS the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	5.4	3	5
2	LOI (loss on ignition)	%	5.2	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	2.2	100	-
7	pH	pH	8.5	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.007	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.0067	0.5	2
10	barium	mg/kg	0.22	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.015	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.34	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.0063	0.06	0.7
19	selenium	mg/kg	0.014	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	4.3	10	150
23	sulphate	mg/kg	47	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	54	500	800
26	TDS (total dissolved solids)	mg/kg	1000	4,000	60,000

Key

User supplied data
Inert WAC criteria fail
Non Hazardous WAC criteria fail

Classification of sample: TP04-1.50

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

Sample details

Sample name:
TP04-1.50
Sample Depth:
1.50-1.50 m
Moisture content:
2.9%
(wet weight 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: 2.9% Wet Weight 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	pH			PH		8.6	pH		8.6	pH	8.6 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.65	mg/kg	3.22	2.032	mg/kg	0.000203 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		1.8	mg/kg		1.748	mg/kg	0.000175 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		94	mg/kg	1.117	101.908	mg/kg	0.0102 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2	mg/kg	1.142	2.218	mg/kg	0.000222 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.8	mg/kg	1.5	5.535	mg/kg	0.000554 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2	mg/kg		1.942	mg/kg	0.000194 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		24	mg/kg		23.304	mg/kg	0.00233 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		85	mg/kg		82.535	mg/kg	0.00825 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.19	mg/kg		0.184	mg/kg	0.0000184 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		41	mg/kg	1.273	50.663	mg/kg	0.00507 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	93	mg/kg		90.303	mg/kg	0.00903 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.87	mg/kg	1.405	1.187	mg/kg	0.000119 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		110	mg/kg	1.245	132.948	mg/kg	0.0133 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		19	mg/kg	1.462	26.964	mg/kg	0.0027 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.34	mg/kg		0.33	mg/kg	0.000033 %	✓	
30	pyrene		204-927-3	129-00-0		0.36	mg/kg		0.35	mg/kg	0.000035 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.19	mg/kg		0.184	mg/kg	0.0000184 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		0.23	mg/kg		0.223	mg/kg	0.0000223 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0538 %		

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

WAC results for sample: TP04-1.50

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.5	3	5
2	LOI (loss on ignition)	%	4.6	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.057	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.015	0.5	2
10	barium	mg/kg	0.082	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.016	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.21	0.5	10
16	nickel	mg/kg	0.0059	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.0061	0.06	0.7
19	selenium	mg/kg	0.0057	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	3.1	10	150
23	sulphate	mg/kg	32	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	1100	4,000	60,000

Key

User supplied data

Classification of sample: TP07-0.30

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

Sample details

Sample name:
TP07-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
7.4%
(wet weight 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% Wet Weight 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	pH			PH		8.3	pH		8.3	pH	8.3 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.2	mg/kg	3.22	3.578	mg/kg	0.000358 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		5.1	mg/kg		4.723	mg/kg	0.000472 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		110	mg/kg	1.117	113.727	mg/kg	0.0114 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.6	mg/kg	1.142	1.692	mg/kg	0.000169 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.6	mg/kg	1.5	3.612	mg/kg	0.000361 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb_2O_4), pentoxide (Sb_2O_5), trisulphide (Sb_2S_3), pentasulphide (Sb_2S_5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		20	mg/kg		18.52	mg/kg	0.00185 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		130	mg/kg		120.38	mg/kg	0.012 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.4	mg/kg		0.37	mg/kg	0.000037 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		35	mg/kg	1.273	41.245	mg/kg	0.00412 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	180	mg/kg		166.68	mg/kg	0.0167 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.9	mg/kg	1.405	1.171	mg/kg	0.000117 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		150	mg/kg	1.245	172.891	mg/kg	0.0173 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		19	mg/kg	1.462	25.715	mg/kg	0.00257 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		88	mg/kg		81.488	mg/kg	0.00815 %	✓	
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		1	mg/kg		0.926	mg/kg	0.0000926 %	✓	
28	anthracene		204-371-1	120-12-7		0.18	mg/kg		0.167	mg/kg	0.0000167 %	✓	
29	fluoranthene		205-912-4	206-44-0		1.7	mg/kg		1.574	mg/kg	0.000157 %	✓	
30	pyrene		204-927-3	129-00-0		1.5	mg/kg		1.389	mg/kg	0.000139 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.8	mg/kg		0.741	mg/kg	0.0000741 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		0.89	mg/kg		0.824	mg/kg	0.0000824 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.95	mg/kg		0.88	mg/kg	0.000088 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.42	mg/kg		0.389	mg/kg	0.0000389 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.76	mg/kg		0.704	mg/kg	0.0000704 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.48	mg/kg		0.444	mg/kg	0.0000444 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.17	mg/kg		0.157	mg/kg	0.0000157 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		0.43	mg/kg		0.398	mg/kg	0.0000398 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0769 %		

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 HP 3 can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00815%)

WAC results for sample: TP07-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	4	3	5
2	LOI (loss on ignition)	%	9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	88	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	9.3	100	-
7	pH	pH	8.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.014	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.057	0.5	2
10	barium	mg/kg	0.13	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.061	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.05	0.5	10
16	nickel	mg/kg	0.011	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.0056	0.06	0.7
19	selenium	mg/kg	0.0072	0.1	0.5
20	zinc	mg/kg	0.034	4	50
21	chloride	mg/kg	20	800	15,000
22	fluoride	mg/kg	2.2	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	63	500	800
26	TDS (total dissolved solids)	mg/kg	1800	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP07-1.00

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

Sample details

Sample name:
TP07-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
8.2%
(wet weight 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: 8.2% Wet Weight 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	pH			PH		8.6	pH		8.6	pH	8.6 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.58	mg/kg	3.22	1.714	mg/kg	0.000171 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		1.8	mg/kg		1.652	mg/kg	0.000165 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		67	mg/kg	1.117	68.672	mg/kg	0.00687 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.6	mg/kg	1.142	1.678	mg/kg	0.000168 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.5	mg/kg	1.5	4.82	mg/kg	0.000482 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2	mg/kg		1.836	mg/kg	0.000184 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		17	mg/kg		15.606	mg/kg	0.00156 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		53	mg/kg		48.654	mg/kg	0.00487 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.26	mg/kg		0.239	mg/kg	0.0000239 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		36	mg/kg	1.273	42.057	mg/kg	0.00421 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	77	mg/kg		70.686	mg/kg	0.00707 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.61	mg/kg	1.405	0.787	mg/kg	0.0000787 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		100	mg/kg	1.245	114.265	mg/kg	0.0114 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		19	mg/kg	1.462	25.492	mg/kg	0.00255 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		98	mg/kg		89.964	mg/kg	0.009 %	✓	
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.14	mg/kg		0.129	mg/kg	0.0000129 %	✓	
30	pyrene		204-927-3	129-00-0		0.13	mg/kg		0.119	mg/kg	0.0000119 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0492 %		

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 HP 3 can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.009%)

WAC results for sample: TP07-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.5	3	5
2	LOI (loss on ignition)	%	12	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	98	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.055	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.011	0.5	10
13	copper	mg/kg	0.028	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.2	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.016	0.06	0.7
19	selenium	mg/kg	0.0097	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	4.7	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	1200	4,000	60,000

Key

User supplied data

Classification of sample: TP08-0.30

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

Sample details

Sample name:
TP08-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
8.4%
(wet weight 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: 8.4% Wet Weight 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	pH			PH		8.3	pH		8.3	pH	8.3 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.5	mg/kg	3.22	4.424	mg/kg	0.000442 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		12	mg/kg		10.992	mg/kg	0.0011 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		190	mg/kg	1.117	194.317	mg/kg	0.0194 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.3	mg/kg	1.142	1.36	mg/kg	0.000136 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		5	mg/kg	1.5	6.871	mg/kg	0.000687 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	4.6	mg/kg		4.214	mg/kg	0.000421 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		30	mg/kg		27.48	mg/kg	0.00275 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		110	mg/kg		100.76	mg/kg	0.0101 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.84	mg/kg		0.769	mg/kg	0.0000769 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		48	mg/kg	1.273	55.953	mg/kg	0.0056 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	450	mg/kg		412.2	mg/kg	0.0412 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.69	mg/kg	1.405	0.888	mg/kg	0.0000888 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		210	mg/kg	1.245	239.433	mg/kg	0.0239 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		21	mg/kg	1.462	28.114	mg/kg	0.00281 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		0.16	mg/kg		0.147	mg/kg	0.0000147 %	✓	
24	acenaphthylene		205-917-1	208-96-8		0.11	mg/kg		0.101	mg/kg	0.0000101 %	✓	
25	acenaphthene		201-469-6	83-32-9		0.1	mg/kg		0.0916	mg/kg	0.00000916 %	✓	
26	fluorene		201-695-5	86-73-7		0.12	mg/kg		0.11	mg/kg	0.000011 %	✓	
27	phenanthrene		201-581-5	85-01-8		1.1	mg/kg		1.008	mg/kg	0.000101 %	✓	
28	anthracene		204-371-1	120-12-7		0.39	mg/kg		0.357	mg/kg	0.0000357 %	✓	
29	fluoranthene		205-912-4	206-44-0		1.8	mg/kg		1.649	mg/kg	0.000165 %	✓	
30	pyrene		204-927-3	129-00-0		1.7	mg/kg		1.557	mg/kg	0.000156 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		1	mg/kg		0.916	mg/kg	0.0000916 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		1.1	mg/kg		1.008	mg/kg	0.000101 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.3	mg/kg		1.191	mg/kg	0.000119 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.46	mg/kg		0.421	mg/kg	0.0000421 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.1	mg/kg		1.008	mg/kg	0.000101 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.65	mg/kg		0.595	mg/kg	0.0000595 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.26	mg/kg		0.238	mg/kg	0.0000238 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		0.64	mg/kg		0.586	mg/kg	0.0000586 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.111 %		

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

WAC results for sample: TP08-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample FAILS the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	6.6	3	5
2	LOI (loss on ignition)	%	10	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	12	100	-
7	pH	pH	8.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.007	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.14	0.5	2
10	barium	mg/kg	0.063	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.03	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.11	0.5	10
16	nickel	mg/kg	0.0054	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.031	0.06	0.7
19	selenium	mg/kg	0.0097	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.9	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	1200	4,000	60,000

Key

User supplied data
Inert WAC criteria fail
Non Hazardous WAC criteria fail

Classification of sample: TP08-1.00

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

Sample details

Sample name:
TP08-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
12%
(wet weight 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% Wet Weight 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	pH			PH		8.4	pH		8.4	pH	8.4 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.73	mg/kg	3.22	2.068	mg/kg	0.000207 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
5	barium { barium oxide }		215-127-9	1304-28-5		56	mg/kg	1.117	55.021	mg/kg	0.0055 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1	mg/kg	1.142	1.005	mg/kg	0.000101 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		<2	mg/kg	1.5	<3	mg/kg	<0.0003 %		<LOD
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		12	mg/kg		10.56	mg/kg	0.00106 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		34	mg/kg		29.92	mg/kg	0.00299 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.25	mg/kg		0.22	mg/kg	0.000022 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		29	mg/kg	1.273	32.477	mg/kg	0.00325 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	29	mg/kg		25.52	mg/kg	0.00255 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.2 mg/kg	1.405	<0.281 mg/kg	<0.0000281 %		<LOD
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		66 mg/kg	1.245	72.293 mg/kg	0.00723 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		20 mg/kg	1.462	25.723 mg/kg	0.00257 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	pyrene		204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0275 %		

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

WAC results for sample: TP08-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.8	3	5
2	LOI (loss on ignition)	%	2.9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.4	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.007	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.0098	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.01	0.5	10
13	copper	mg/kg	0.01	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.18	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.0072	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.3	10	150
23	sulphate	mg/kg	11	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	780	4,000	60,000

Key

User supplied data

Classification of sample: TP13-0.30

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

Sample details

Sample name:
TP13-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
5.1%
(wet weight 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: 5.1% Wet Weight 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	pH			PH		8.6	pH		8.6	pH	8.6 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.92	mg/kg	3.22	2.811	mg/kg	0.000281 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		60	mg/kg	1.117	63.574	mg/kg	0.00636 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.4	mg/kg	1.142	2.602	mg/kg	0.00026 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.8	mg/kg	1.5	5.41	mg/kg	0.000541 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2	mg/kg		1.898	mg/kg	0.00019 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		25	mg/kg		23.725	mg/kg	0.00237 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		50	mg/kg		47.45	mg/kg	0.00475 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.13	mg/kg		0.123	mg/kg	0.0000123 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		44	mg/kg	1.273	53.138	mg/kg	0.00531 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	40	mg/kg		37.96	mg/kg	0.0038 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.24	mg/kg	1.405	0.32	mg/kg	0.000032 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		73	mg/kg	1.245	86.23	mg/kg	0.00862 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		19	mg/kg	1.462	26.353	mg/kg	0.00264 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		130	mg/kg		123.37	mg/kg	0.0123 %	✓	
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30	pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.048 %		

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 HP 3 can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0123%)

WAC results for sample: TP13-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.8	3	5
2	LOI (loss on ignition)	%	4.6	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	130	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.014	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.0063	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.02	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.063	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.0052	0.06	0.7
19	selenium	mg/kg	0.0062	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	3.2	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	54	500	800
26	TDS (total dissolved solids)	mg/kg	720	4,000	60,000

Key

User supplied data

Classification of sample: TP13-1.00

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

Sample details

Sample name:
TP13-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
2.4%
(wet weight 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: 2.4% Wet Weight 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	pH			PH		8.8	pH		8.8	pH	8.8 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		**<LOD**
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
4	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				0.7	mg/kg	1.884	1.287	mg/kg	0.000129 %	✓	
5	barium { barium oxide }		215-127-9	1304-28-5		84	mg/kg	1.117	91.536	mg/kg	0.00915 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.2	mg/kg	1.142	1.338	mg/kg	0.000134 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.8	mg/kg	1.5	4.1	mg/kg	0.00041 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.2	mg/kg		2.147	mg/kg	0.000215 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		17	mg/kg		16.592	mg/kg	0.00166 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		54	mg/kg		52.704	mg/kg	0.00527 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.71	mg/kg		0.693	mg/kg	0.0000693 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		32	mg/kg	1.273	39.746	mg/kg	0.00397 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	190	mg/kg		185.44	mg/kg	0.0185 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.68	mg/kg	1.405	0.932	mg/kg	0.0000932 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		130	mg/kg	1.245	157.929	mg/kg	0.0158 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		19	mg/kg	1.462	27.103	mg/kg	0.00271 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30	pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0597 %		

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

WAC results for sample: TP13-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	2.4	3	5
2	LOI (loss on ignition)	%	2.2	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.8	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.006	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.005	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0061	0.5	10
13	copper	mg/kg	0.008	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.045	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	0.0058	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	3.6	10	150
23	sulphate	mg/kg	24	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	720	4,000	60,000

Key

User supplied data

Classification of sample: TP14-0.30

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

Sample details

Sample name:
TP14-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
9.1%
(wet weight 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: 9.1% Wet Weight 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	pH			PH		8.6	pH		8.6	pH	8.6 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.4	mg/kg	3.22	4.098	mg/kg	0.00041 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		7.6	mg/kg		6.908	mg/kg	0.000691 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		76	mg/kg	1.117	77.133	mg/kg	0.00771 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.6	mg/kg	1.142	1.661	mg/kg	0.000166 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.6	mg/kg	1.5	3.546	mg/kg	0.000355 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb_2O_4), pentoxide (Sb_2O_5), trisulphide (Sb_2S_3), pentasulphide (Sb_2S_5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		22	mg/kg		19.998	mg/kg	0.002 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		46	mg/kg		41.814	mg/kg	0.00418 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.16	mg/kg		0.145	mg/kg	0.0000145 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		34	mg/kg	1.273	39.331	mg/kg	0.00393 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	46	mg/kg		41.814	mg/kg	0.00418 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.37	mg/kg	1.405	0.473	mg/kg	0.0000473 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		55	mg/kg	1.245	62.229	mg/kg	0.00622 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		18	mg/kg	1.462	23.914	mg/kg	0.00239 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		79	mg/kg		71.811	mg/kg	0.00718 %	✓	
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		0.27	mg/kg		0.245	mg/kg	0.0000245 %	✓	
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		0.52	mg/kg		0.473	mg/kg	0.0000473 %	✓	
26	fluorene		201-695-5	86-73-7		0.52	mg/kg		0.473	mg/kg	0.0000473 %	✓	
27	phenanthrene		201-581-5	85-01-8		4	mg/kg		3.636	mg/kg	0.000364 %	✓	
28	anthracene		204-371-1	120-12-7		0.68	mg/kg		0.618	mg/kg	0.0000618 %	✓	
29	fluoranthene		205-912-4	206-44-0		4	mg/kg		3.636	mg/kg	0.000364 %	✓	
30	pyrene		204-927-3	129-00-0		3.2	mg/kg		2.909	mg/kg	0.000291 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		1.8	mg/kg		1.636	mg/kg	0.000164 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		2	mg/kg		1.818	mg/kg	0.000182 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		2	mg/kg		1.818	mg/kg	0.000182 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.65	mg/kg		0.591	mg/kg	0.0000591 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.7	mg/kg		1.545	mg/kg	0.000155 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.97	mg/kg		0.882	mg/kg	0.0000882 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.26	mg/kg		0.236	mg/kg	0.0000236 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		0.93	mg/kg		0.845	mg/kg	0.0000845 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0421 %		

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 HP 3 can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00718%)

WAC results for sample: TP14-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	3.7	3	5
2	LOI (loss on ignition)	%	7.9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	79	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	24	100	-
7	pH	pH	8.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.027	0.5	2
10	barium	mg/kg	0.1	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.042	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.14	0.5	10
16	nickel	mg/kg	0.005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.02	0.06	0.7
19	selenium	mg/kg	0.0091	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	21	800	15,000
22	fluoride	mg/kg	3.7	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	69	500	800
26	TDS (total dissolved solids)	mg/kg	1400	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP14-1.00

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

Sample details

Sample name:
TP14-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
2.5%
(wet weight 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: 2.5% Wet Weight 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	pH			PH		8.7	pH		8.7	pH	8.7 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.52	mg/kg	3.22	1.632	mg/kg	0.000163 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		70	mg/kg	1.117	76.202	mg/kg	0.00762 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.2	mg/kg	1.142	1.337	mg/kg	0.000134 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.3	mg/kg	1.5	3.364	mg/kg	0.000336 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb_2O_4), pentoxide (Sb_2O_5), trisulphide (Sb_2S_3), pentasulphide (Sb_2S_5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		16	mg/kg		15.6	mg/kg	0.00156 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		67	mg/kg		65.325	mg/kg	0.00653 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.26	mg/kg		0.254	mg/kg	0.0000254 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		28	mg/kg	1.273	34.742	mg/kg	0.00347 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	97	mg/kg		94.575	mg/kg	0.00946 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.48	mg/kg	1.405	0.658	mg/kg	0.0000658 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		95	mg/kg	1.245	115.292	mg/kg	0.0115 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		16	mg/kg	1.462	22.8	mg/kg	0.00228 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.13	mg/kg		0.127	mg/kg	0.0000127 %	✓	
30	pyrene		204-927-3	129-00-0		0.12	mg/kg		0.117	mg/kg	0.0000117 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0449 %		

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

WAC results for sample: TP14-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.1	3	5
2	LOI (loss on ignition)	%	2.5	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.7	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.005	0.5	2
10	barium	mg/kg	0.057	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.011	0.5	10
13	copper	mg/kg	0.0095	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.045	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	21	800	15,000
22	fluoride	mg/kg	3.1	10	150
23	sulphate	mg/kg	73	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	1500	4,000	60,000

Key

User supplied data

Classification of sample: TP15-0.30

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

Sample details

Sample name:
TP15-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
7.2%
(wet weight 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: 7.2% Wet Weight 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	pH			PH		8.4	pH		8.4	pH	8.4 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.1	mg/kg	3.22	3.287	mg/kg	0.000329 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		5.3	mg/kg		4.918	mg/kg	0.000492 %	✓	
4	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				8.3	mg/kg	1.884	14.511	mg/kg	0.00145 %	✓	
5	barium { barium oxide }		215-127-9	1304-28-5		87	mg/kg	1.117	90.142	mg/kg	0.00901 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.6	mg/kg	1.142	1.696	mg/kg	0.00017 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.7	mg/kg	1.5	3.759	mg/kg	0.000376 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		19	mg/kg		17.632	mg/kg	0.00176 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		85	mg/kg		78.88	mg/kg	0.00789 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.28	mg/kg		0.26	mg/kg	0.000026 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		33	mg/kg	1.273	38.972	mg/kg	0.0039 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	110	mg/kg		102.08	mg/kg	0.0102 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.67	mg/kg	1.405	0.874	mg/kg	0.0000874 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		120	mg/kg	1.245	138.611	mg/kg	0.0139 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		20	mg/kg	1.462	27.126	mg/kg	0.00271 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		**<LOD**
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
27	phenanthrene		201-581-5	85-01-8		0.52	mg/kg		0.483	mg/kg	0.0000483 %	✓	
28	anthracene		204-371-1	120-12-7		0.5	mg/kg		0.464	mg/kg	0.0000464 %	✓	
29	fluoranthene		205-912-4	206-44-0		1.7	mg/kg		1.578	mg/kg	0.000158 %	✓	
30	pyrene		204-927-3	129-00-0		1.7	mg/kg		1.578	mg/kg	0.000158 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		1.3	mg/kg		1.206	mg/kg	0.000121 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		1.2	mg/kg		1.114	mg/kg	0.000111 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.4	mg/kg		1.299	mg/kg	0.00013 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.61	mg/kg		0.566	mg/kg	0.0000566 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.1	mg/kg		1.021	mg/kg	0.000102 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.7	mg/kg		0.65	mg/kg	0.000065 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.14	mg/kg		0.13	mg/kg	0.000013 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		0.68	mg/kg		0.631	mg/kg	0.0000631 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0547 %		

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

WAC results for sample: TP15-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	3	3	5
2	LOI (loss on ignition)	%	5.5	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	12	100	-
7	pH	pH	8.4	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.099	0.5	2
10	barium	mg/kg	0.075	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.019	0.5	10
13	copper	mg/kg	0.056	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.07	0.5	10
16	nickel	mg/kg	0.0086	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.02	0.06	0.7
19	selenium	mg/kg	0.011	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	3.4	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	56	500	800
26	TDS (total dissolved solids)	mg/kg	7800	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP15-1.00

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

Sample details

Sample name:
TP15-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
8.3%
(wet weight 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% Wet Weight 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	pH			PH		8.6	pH		8.6	pH	8.6 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.53	mg/kg	3.22	1.565	mg/kg	0.000156 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
4	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				10	mg/kg	1.884	17.276	mg/kg	0.00173 %	✓	
5	barium { barium oxide }		215-127-9	1304-28-5		43	mg/kg	1.117	44.025	mg/kg	0.0044 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.83	mg/kg	1.142	0.869	mg/kg	0.0000869 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.9	mg/kg	1.5	3.989	mg/kg	0.000399 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		9.8	mg/kg		8.987	mg/kg	0.000899 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		110	mg/kg		100.87	mg/kg	0.0101 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		26	mg/kg	1.273	30.341	mg/kg	0.00303 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	31	mg/kg		28.427	mg/kg	0.00284 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.53	mg/kg	1.405	0.683	mg/kg	0.0000683 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		70	mg/kg	1.245	79.898	mg/kg	0.00799 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		18	mg/kg	1.462	24.124	mg/kg	0.00241 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30	pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0357 %		

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

WAC results for sample: TP15-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.68	3	5
2	LOI (loss on ignition)	%	2.2	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.0079	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.011	0.5	10
13	copper	mg/kg	0.021	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.17	0.5	10
16	nickel	mg/kg	0.0058	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.006	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	0.025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.8	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	120	500	800
26	TDS (total dissolved solids)	mg/kg	1800	4,000	60,000

Key

User supplied data

Classification of sample: TP16-0.30

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

Sample details

Sample name:
TP16-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
10%
(wet weight 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% Wet Weight 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	pH			PH		8.2	pH		8.2	pH	8.2 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.7	mg/kg	3.22	2.029	mg/kg	0.000203 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		7.2	mg/kg		6.48	mg/kg	0.000648 %	✓	
4	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				7.9	mg/kg	1.884	13.395	mg/kg	0.00134 %	✓	
5	barium { barium oxide }		215-127-9	1304-28-5		85	mg/kg	1.117	85.413	mg/kg	0.00854 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.1	mg/kg	1.142	1.131	mg/kg	0.000113 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.4	mg/kg	1.5	3.24	mg/kg	0.000324 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		17	mg/kg		15.3	mg/kg	0.00153 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		110	mg/kg		99	mg/kg	0.0099 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.54	mg/kg		0.486	mg/kg	0.0000486 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		29	mg/kg	1.273	33.215	mg/kg	0.00332 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	180	mg/kg		162	mg/kg	0.0162 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.73	mg/kg	1.405	0.923	mg/kg	0.0000923 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		120	mg/kg	1.245	134.429	mg/kg	0.0134 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		17	mg/kg	1.462	22.362	mg/kg	0.00224 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		0.83	mg/kg		0.747	mg/kg	0.0000747 %	✓	
28	anthracene		204-371-1	120-12-7		0.17	mg/kg		0.153	mg/kg	0.0000153 %	✓	
29	fluoranthene		205-912-4	206-44-0		1	mg/kg		0.9	mg/kg	0.00009 %	✓	
30	pyrene		204-927-3	129-00-0		0.95	mg/kg		0.855	mg/kg	0.0000855 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.58	mg/kg		0.522	mg/kg	0.0000522 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		0.63	mg/kg		0.567	mg/kg	0.0000567 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.72	mg/kg		0.648	mg/kg	0.0000648 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.21	mg/kg		0.189	mg/kg	0.0000189 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.63	mg/kg		0.567	mg/kg	0.0000567 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0599 %		

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

WAC results for sample: TP16-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	4.7	3	5
2	LOI (loss on ignition)	%	9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	5.7	100	-
7	pH	pH	8.2	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.068	0.5	2
10	barium	mg/kg	0.075	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.072	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.046	0.5	10
16	nickel	mg/kg	0.01	0.4	10
17	lead	mg/kg	0.0078	0.5	10
18	antimony	mg/kg	0.01	0.06	0.7
19	selenium	mg/kg	0.011	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.5	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	59	500	800
26	TDS (total dissolved solids)	mg/kg	1400	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP16-0.60

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

Sample details

Sample name:
TP16-0.60
Sample Depth:
0.60-0.60 m
Moisture content:
9.7%
(wet weight 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: 9.7% Wet Weight 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	pH			PH		8.6	pH		8.6	pH	8.6 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.88	mg/kg	3.22	2.559	mg/kg	0.000256 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
4	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				18	mg/kg	1.884	30.623	mg/kg	0.00306 %	✓	
5	barium { barium oxide }		215-127-9	1304-28-5		57	mg/kg	1.117	57.468	mg/kg	0.00575 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.3	mg/kg	1.142	1.341	mg/kg	0.000134 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.4	mg/kg	1.5	3.251	mg/kg	0.000325 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		10	mg/kg		9.03	mg/kg	0.000903 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		58	mg/kg		52.374	mg/kg	0.00524 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.12	mg/kg		0.108	mg/kg	0.0000108 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		25	mg/kg	1.273	28.729	mg/kg	0.00287 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	36	mg/kg		32.508	mg/kg	0.00325 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.34	mg/kg	1.405	0.431	mg/kg	0.0000431 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		74	mg/kg	1.245	83.174	mg/kg	0.00832 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		15	mg/kg	1.462	19.797	mg/kg	0.00198 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30	pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0337 %		

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

WAC results for sample: TP16-0.60

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.1	3	5
2	LOI (loss on ignition)	%	3.6	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.011	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.012	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.015	0.5	10
13	copper	mg/kg	0.017	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.23	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.0077	0.06	0.7
19	selenium	mg/kg	0.0064	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	3.4	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	53	500	800
26	TDS (total dissolved solids)	mg/kg	1300	4,000	60,000

Key

User supplied data

Classification of sample: TP17-0.30

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

Sample details

Sample name:
TP17-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
7.7%
(wet weight 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: 7.7% Wet Weight 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	pH			PH		8.3	pH		8.3	pH	8.3 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.8	mg/kg	3.22	5.35	mg/kg	0.000535 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		10	mg/kg		9.23	mg/kg	0.000923 %	✓	
4	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				1.2	mg/kg	1.884	2.087	mg/kg	0.000209 %	✓	
5	barium { barium oxide }		215-127-9	1304-28-5		87	mg/kg	1.117	89.657	mg/kg	0.00897 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.1	mg/kg	1.142	1.16	mg/kg	0.000116 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.7	mg/kg	1.5	3.739	mg/kg	0.000374 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2	mg/kg		1.846	mg/kg	0.000185 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		22	mg/kg		20.306	mg/kg	0.00203 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		110	mg/kg		101.53	mg/kg	0.0102 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.57	mg/kg		0.526	mg/kg	0.0000526 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		34	mg/kg	1.273	39.937	mg/kg	0.00399 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	160	mg/kg		147.68	mg/kg	0.0148 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.47	mg/kg	1.405	0.61	mg/kg	0.000061 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		120	mg/kg	1.245	137.865	mg/kg	0.0138 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		18	mg/kg	1.462	24.282	mg/kg	0.00243 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		3.4	mg/kg		3.138	mg/kg	0.000314 %	✓	
28	anthracene		204-371-1	120-12-7		0.5	mg/kg		0.461	mg/kg	0.0000461 %	✓	
29	fluoranthene		205-912-4	206-44-0		4.2	mg/kg		3.877	mg/kg	0.000388 %	✓	
30	pyrene		204-927-3	129-00-0		3.6	mg/kg		3.323	mg/kg	0.000332 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		1.8	mg/kg		1.661	mg/kg	0.000166 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		1.9	mg/kg		1.754	mg/kg	0.000175 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.9	mg/kg		1.754	mg/kg	0.000175 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.67	mg/kg		0.618	mg/kg	0.0000618 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.4	mg/kg		1.292	mg/kg	0.000129 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.87	mg/kg		0.803	mg/kg	0.0000803 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.24	mg/kg		0.222	mg/kg	0.0000222 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		1.2	mg/kg		1.108	mg/kg	0.000111 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0617 %		

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

WAC results for sample: TP17-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	3	3	5
2	LOI (loss on ignition)	%	6.7	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	22	100	-
7	pH	pH	8.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.008	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.16	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.036	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.058	0.5	10
16	nickel	mg/kg	0.0084	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.025	0.06	0.7
19	selenium	mg/kg	0.0094	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	3.1	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	78	500	800
26	TDS (total dissolved solids)	mg/kg	1200	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP17-0.60

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

Sample details

Sample name:
TP17-0.60
Sample Depth:
0.60-0.60 m
Moisture content:
6.7%
(wet weight 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: 6.7% Wet Weight 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	pH			PH		8.3	pH		8.3	pH	8.3 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.43	mg/kg	3.22	1.292	mg/kg	0.000129 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
5	barium { barium oxide }		215-127-9	1304-28-5		63	mg/kg	1.117	65.627	mg/kg	0.00656 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.4	mg/kg	1.142	1.492	mg/kg	0.000149 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.7	mg/kg	1.5	3.779	mg/kg	0.000378 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		15	mg/kg		13.995	mg/kg	0.0014 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		58	mg/kg		54.114	mg/kg	0.00541 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.16	mg/kg		0.149	mg/kg	0.0000149 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		44	mg/kg	1.273	52.242	mg/kg	0.00522 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	37	mg/kg		34.521	mg/kg	0.00345 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.34	mg/kg	1.405	0.446	mg/kg	0.0000446 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		88	mg/kg	1.245	102.196	mg/kg	0.0102 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		29	mg/kg	1.462	39.545	mg/kg	0.00395 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30	pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0386 %		

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

WAC results for sample: TP17-0.60

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.76	3	5
2	LOI (loss on ignition)	%	3.1	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.006	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.073	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0053	0.5	10
13	copper	mg/kg	0.018	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.11	0.5	10
16	nickel	mg/kg	0.0064	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.015	0.06	0.7
19	selenium	mg/kg	0.0062	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	190	500	800
26	TDS (total dissolved solids)	mg/kg	410	4,000	60,000

Key

User supplied data

Classification of sample: TP18-0.30

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

Sample details

Sample name:
TP18-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
8.9%
(wet weight 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: 8.9% Wet Weight 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	pH			PH		8.2	pH		8.2	pH	8.2 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.7	mg/kg	3.22	4.987	mg/kg	0.000499 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		7	mg/kg		6.377	mg/kg	0.000638 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		110	mg/kg	1.117	111.885	mg/kg	0.0112 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.3	mg/kg	1.142	1.353	mg/kg	0.000135 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.3	mg/kg	1.5	4.51	mg/kg	0.000451 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	3.1	mg/kg		2.824	mg/kg	0.000282 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		24	mg/kg		21.864	mg/kg	0.00219 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		72	mg/kg		65.592	mg/kg	0.00656 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.51	mg/kg		0.465	mg/kg	0.0000465 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		40	mg/kg	1.273	46.373	mg/kg	0.00464 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	180	mg/kg		163.98	mg/kg	0.0164 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.55	mg/kg	1.405	0.704	mg/kg	0.0000704 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		200	mg/kg	1.245	226.787	mg/kg	0.0227 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		24	mg/kg	1.462	31.955	mg/kg	0.0032 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		430	mg/kg		391.73	mg/kg	0.0392 %	✓	
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		3	mg/kg		2.733	mg/kg	0.000273 %	✓	
28	anthracene		204-371-1	120-12-7		0.44	mg/kg		0.401	mg/kg	0.0000401 %	✓	
29	fluoranthene		205-912-4	206-44-0		3.7	mg/kg		3.371	mg/kg	0.000337 %	✓	
30	pyrene		204-927-3	129-00-0		3.1	mg/kg		2.824	mg/kg	0.000282 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		1.6	mg/kg		1.458	mg/kg	0.000146 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		1.8	mg/kg		1.64	mg/kg	0.000164 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		2	mg/kg		1.822	mg/kg	0.000182 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.63	mg/kg		0.574	mg/kg	0.0000574 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.5	mg/kg		1.366	mg/kg	0.000137 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.87	mg/kg		0.793	mg/kg	0.0000793 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.36	mg/kg		0.328	mg/kg	0.0000328 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		0.96	mg/kg		0.875	mg/kg	0.0000875 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.11 %		

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 HP 3 can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0392%)

WAC results for sample: TP18-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	3.6	3	5
2	LOI (loss on ignition)	%	6.5	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	430	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	20	100	-
7	pH	pH	8.2	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.013	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.11	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.032	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.1	0.5	10
16	nickel	mg/kg	0.0054	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.044	0.06	0.7
19	selenium	mg/kg	0.008	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.3	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	62	500	800
26	TDS (total dissolved solids)	mg/kg	1200	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP18-1.00

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

Sample details

Sample name:
TP18-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
6.7%
(wet weight 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: 6.7% Wet Weight 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	pH			PH		8.6	pH		8.6	pH	8.6 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		**<LOD**
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		68	mg/kg	1.117	70.836	mg/kg	0.00708 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.9	mg/kg	1.142	3.091	mg/kg	0.000309 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4	mg/kg	1.5	5.599	mg/kg	0.00056 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.6	mg/kg		2.426	mg/kg	0.000243 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		22	mg/kg		20.526	mg/kg	0.00205 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		66	mg/kg		61.578	mg/kg	0.00616 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.12	mg/kg		0.112	mg/kg	0.0000112 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		61	mg/kg	1.273	72.427	mg/kg	0.00724 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	36	mg/kg		33.588	mg/kg	0.00336 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.27	mg/kg	1.405	0.354	mg/kg	0.0000354 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		94	mg/kg	1.245	109.164	mg/kg	0.0109 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		21	mg/kg	1.462	28.636	mg/kg	0.00286 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.26	mg/kg		0.243	mg/kg	0.0000243 %	✓	
30	pyrene		204-927-3	129-00-0		0.24	mg/kg		0.224	mg/kg	0.0000224 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0425 %		

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

WAC results for sample: TP18-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.37	3	5
2	LOI (loss on ignition)	%	2.2	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.008	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.053	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0094	0.5	10
13	copper	mg/kg	0.012	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.27	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.019	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.3	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	980	4,000	60,000

Key

User supplied data

Classification of sample: TP19-0.30

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

Sample details

Sample name:
TP19-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
9.1%
(wet weight 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: 9.1% Wet Weight 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	pH			PH		8.3	pH		8.3	pH	8.3 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		2.2	mg/kg	3.22	6.439	mg/kg	0.000644 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		8.7	mg/kg		7.908	mg/kg	0.000791 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		140	mg/kg	1.117	142.087	mg/kg	0.0142 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.4	mg/kg	1.142	1.454	mg/kg	0.000145 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.7	mg/kg	1.5	5.046	mg/kg	0.000505 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	3.9	mg/kg		3.545	mg/kg	0.000355 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		31	mg/kg		28.179	mg/kg	0.00282 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		92	mg/kg		83.628	mg/kg	0.00836 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.82	mg/kg		0.745	mg/kg	0.0000745 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		46	mg/kg	1.273	53.212	mg/kg	0.00532 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	260	mg/kg		236.34	mg/kg	0.0236 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.49	mg/kg	1.405	0.626	mg/kg	0.0000626 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		260	mg/kg	1.245	294.176	mg/kg	0.0294 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		23	mg/kg	1.462	30.557	mg/kg	0.00306 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		1.5	mg/kg		1.364	mg/kg	0.000136 %	✓	
28	anthracene		204-371-1	120-12-7		0.24	mg/kg		0.218	mg/kg	0.0000218 %	✓	
29	fluoranthene		205-912-4	206-44-0		1.8	mg/kg		1.636	mg/kg	0.000164 %	✓	
30	pyrene		204-927-3	129-00-0		1.6	mg/kg		1.454	mg/kg	0.000145 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.83	mg/kg		0.754	mg/kg	0.0000754 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		0.96	mg/kg		0.873	mg/kg	0.0000873 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1	mg/kg		0.909	mg/kg	0.0000909 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.45	mg/kg		0.409	mg/kg	0.0000409 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.89	mg/kg		0.809	mg/kg	0.0000809 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.58	mg/kg		0.527	mg/kg	0.0000527 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.24	mg/kg		0.218	mg/kg	0.0000218 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		0.62	mg/kg		0.564	mg/kg	0.0000564 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0916 %		

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

WAC results for sample: TP19-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	4.7	3	5
2	LOI (loss on ignition)	%	7.9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	11	100	-
7	pH	pH	8.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.25	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.033	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.083	0.5	10
16	nickel	mg/kg	0.0056	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.055	0.06	0.7
19	selenium	mg/kg	0.01	0.1	0.5
20	zinc	mg/kg	0.03	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.4	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	1100	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP19-0.80

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

Sample details

Sample name:
TP19-0.80
Sample Depth:
0.80-0.80 m
Moisture content:
13%
(wet weight 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% Wet Weight 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	pH			PH		8.6	pH		8.6	pH	8.6 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.52	mg/kg	3.22	1.457	mg/kg	0.000146 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		2.4	mg/kg		2.088	mg/kg	0.000209 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		51	mg/kg	1.117	49.539	mg/kg	0.00495 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.4	mg/kg	1.142	1.391	mg/kg	0.000139 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.6	mg/kg	1.5	4.699	mg/kg	0.00047 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.8	mg/kg		2.436	mg/kg	0.000244 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		15	mg/kg		13.05	mg/kg	0.00131 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		56	mg/kg		48.72	mg/kg	0.00487 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.15	mg/kg		0.13	mg/kg	0.000013 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		36	mg/kg	1.273	39.858	mg/kg	0.00399 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	40	mg/kg		34.8	mg/kg	0.00348 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.35	mg/kg	1.405	0.428	mg/kg	0.0000428 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		75	mg/kg	1.245	81.218	mg/kg	0.00812 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		17	mg/kg	1.462	21.616	mg/kg	0.00216 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.26	mg/kg		0.226	mg/kg	0.0000226 %	✓	
30	pyrene		204-927-3	129-00-0		0.24	mg/kg		0.209	mg/kg	0.0000209 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.14	mg/kg		0.122	mg/kg	0.0000122 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		0.15	mg/kg		0.13	mg/kg	0.000013 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0316 %		

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

WAC results for sample: TP19-0.80

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	3.9	3	5
2	LOI (loss on ignition)	%	2.7	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.093	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.019	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.21	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.032	0.06	0.7
19	selenium	mg/kg	0.0086	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.4	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	120	500	800
26	TDS (total dissolved solids)	mg/kg	1400	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP20-0.40

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

Sample details

Sample name:
TP20-0.40
Sample Depth:
0.40-0.40 m
Moisture content:
6.3%
(wet weight 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: 6.3% Wet Weight 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	pH			PH		8.5	pH		8.5	pH	8.5 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		**<LOD**
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		2.7	mg/kg		2.53	mg/kg	0.000253 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		86	mg/kg	1.117	89.97	mg/kg	0.009 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.5	mg/kg	1.142	1.606	mg/kg	0.000161 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3	mg/kg	1.5	4.217	mg/kg	0.000422 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.2	mg/kg		2.061	mg/kg	0.000206 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		41	mg/kg		38.417	mg/kg	0.00384 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		63	mg/kg		59.031	mg/kg	0.0059 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.47	mg/kg		0.44	mg/kg	0.000044 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		42	mg/kg	1.273	50.082	mg/kg	0.00501 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	140	mg/kg		131.18	mg/kg	0.0131 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.51	mg/kg	1.405	0.671	mg/kg	0.0000671 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		120	mg/kg	1.245	139.956	mg/kg	0.014 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		23	mg/kg	1.462	31.498	mg/kg	0.00315 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30	pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0567 %		

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

WAC results for sample: TP20-0.40

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.4	3	5
2	LOI (loss on ignition)	%	6.6	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.5	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.013	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.016	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0069	0.5	10
13	copper	mg/kg	0.024	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.076	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.0077	0.06	0.7
19	selenium	mg/kg	0.0063	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.8	10	150
23	sulphate	mg/kg	20	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	55	500	800
26	TDS (total dissolved solids)	mg/kg	1000	4,000	60,000

Key

User supplied data

Classification of sample: TP20-0.80

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

Sample details

Sample name:
TP20-0.80
Sample Depth:
0.80-0.80 m
Moisture content:
14%
(wet weight 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% Wet Weight 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	pH			PH		8.4	pH		8.4	pH	8.4 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.68	mg/kg	3.22	1.883	mg/kg	0.000188 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
5	barium { barium oxide }		215-127-9	1304-28-5		55	mg/kg	1.117	52.811	mg/kg	0.00528 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1	mg/kg	1.142	0.982	mg/kg	0.0000982 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		<2	mg/kg	1.5	<3	mg/kg	<0.0003 %		<LOD
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		13	mg/kg		11.18	mg/kg	0.00112 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		37	mg/kg		31.82	mg/kg	0.00318 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.25	mg/kg		0.215	mg/kg	0.0000215 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		32	mg/kg	1.273	35.022	mg/kg	0.0035 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	28	mg/kg		24.08	mg/kg	0.00241 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.2 mg/kg	1.405	<0.281 mg/kg	<0.0000281 %		<LOD
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		75 mg/kg	1.245	80.284 mg/kg	0.00803 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		21 mg/kg	1.462	26.396 mg/kg	0.00264 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	pyrene		204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0285 %		

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

WAC results for sample: TP20-0.80

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.1	3	5
2	LOI (loss on ignition)	%	3.6	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.4	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.004	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.0034	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0079	0.5	10
13	copper	mg/kg	0.011	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.11	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.0059	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.8	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	710	4,000	60,000

Key

User supplied data

Classification of sample: TP22-0.30

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

Sample details

Sample name:
TP22-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
8.1%
(wet weight 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: 8.1% Wet Weight 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	pH			PH		8.7	pH		8.7	pH	8.7 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.8	mg/kg	3.22	5.326	mg/kg	0.000533 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		8.2	mg/kg		7.536	mg/kg	0.000754 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		190	mg/kg	1.117	194.953	mg/kg	0.0195 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.8	mg/kg	1.142	1.89	mg/kg	0.000189 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		5.9	mg/kg	1.5	8.134	mg/kg	0.000813 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	5.2	mg/kg		4.779	mg/kg	0.000478 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		49	mg/kg		45.031	mg/kg	0.0045 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		160	mg/kg		147.04	mg/kg	0.0147 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.93	mg/kg		0.855	mg/kg	0.0000855 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		62	mg/kg	1.273	72.51	mg/kg	0.00725 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	360	mg/kg		330.84	mg/kg	0.0331 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.73	mg/kg	1.405	0.943	mg/kg	0.0000943 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		370	mg/kg	1.245	423.24	mg/kg	0.0423 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		25	mg/kg	1.462	33.579	mg/kg	0.00336 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		0.19	mg/kg		0.175	mg/kg	0.0000175 %	✓	
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		0.15	mg/kg		0.138	mg/kg	0.0000138 %	✓	
26	fluorene		201-695-5	86-73-7		0.12	mg/kg		0.11	mg/kg	0.000011 %	✓	
27	phenanthrene		201-581-5	85-01-8		1.4	mg/kg		1.287	mg/kg	0.000129 %	✓	
28	anthracene		204-371-1	120-12-7		0.22	mg/kg		0.202	mg/kg	0.0000202 %	✓	
29	fluoranthene		205-912-4	206-44-0		1.8	mg/kg		1.654	mg/kg	0.000165 %	✓	
30	pyrene		204-927-3	129-00-0		1.7	mg/kg		1.562	mg/kg	0.000156 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.93	mg/kg		0.855	mg/kg	0.0000855 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		1	mg/kg		0.919	mg/kg	0.0000919 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.2	mg/kg		1.103	mg/kg	0.00011 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.38	mg/kg		0.349	mg/kg	0.0000349 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.88	mg/kg		0.809	mg/kg	0.0000809 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.56	mg/kg		0.515	mg/kg	0.0000515 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.18	mg/kg		0.165	mg/kg	0.0000165 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		0.61	mg/kg		0.561	mg/kg	0.0000561 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.13 %		

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

WAC results for sample: TP22-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample FAILS the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	6	3	5
2	LOI (loss on ignition)	%	10	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	11	100	-
7	pH	pH	8.7	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.004	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.3	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.044	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.056	0.5	10
16	nickel	mg/kg	0.0091	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.049	0.06	0.7
19	selenium	mg/kg	0.012	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.2	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	53	500	800
26	TDS (total dissolved solids)	mg/kg	1000	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail
	Non Hazardous WAC criteria fail

Classification of sample: TP22-1.00

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

Sample details

Sample name:
TP22-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
6.9%
(wet weight 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: 6.9% Wet Weight 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	pH			PH		8.3	pH		8.3	pH	8.3 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		<LOD
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
5	barium { barium oxide }		215-127-9	1304-28-5		78	mg/kg	1.117	81.078	mg/kg	0.00811 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.7	mg/kg	1.142	1.808	mg/kg	0.000181 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3	mg/kg	1.5	4.19	mg/kg	0.000419 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		23	mg/kg		21.413	mg/kg	0.00214 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		52	mg/kg		48.412	mg/kg	0.00484 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		46	mg/kg	1.273	54.5	mg/kg	0.00545 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	36	mg/kg		33.516	mg/kg	0.00335 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.2	mg/kg	1.405	<0.281	mg/kg	<0.0000281 %		<LOD
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		63	mg/kg	1.245	73.006	mg/kg	0.0073 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		22	mg/kg	1.462	29.936	mg/kg	0.00299 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30	pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0366 %		

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

WAC results for sample: TP22-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.4	3	5
2	LOI (loss on ignition)	%	0.96	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.0078	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0093	0.5	10
13	copper	mg/kg	0.011	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.2	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.006	0.06	0.7
19	selenium	mg/kg	0.0077	0.1	0.5
20	zinc	mg/kg	0.027	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	3.3	10	150
23	sulphate	mg/kg	16	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	1800	4,000	60,000

Key

User supplied data

Classification of sample: TP23-0.30

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

Sample details

Sample name:
TP23-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
8.1%
(wet weight 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: 8.1% Wet Weight 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	pH			PH		8.2	pH		8.2	pH	8.2 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		2.6	mg/kg	3.22	7.694	mg/kg	0.000769 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		12	mg/kg		11.028	mg/kg	0.0011 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		120	mg/kg	1.117	123.128	mg/kg	0.0123 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.1	mg/kg	1.142	1.155	mg/kg	0.000115 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.1	mg/kg	1.5	4.274	mg/kg	0.000427 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.3	mg/kg		2.114	mg/kg	0.000211 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		24	mg/kg		22.056	mg/kg	0.00221 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		94	mg/kg		86.386	mg/kg	0.00864 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.6	mg/kg		0.551	mg/kg	0.0000551 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		38	mg/kg	1.273	44.441	mg/kg	0.00444 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	460	mg/kg		422.74	mg/kg	0.0423 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.84	mg/kg	1.405	1.085	mg/kg	0.000108 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		170	mg/kg	1.245	194.462	mg/kg	0.0194 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		17	mg/kg	1.462	22.834	mg/kg	0.00228 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		100	mg/kg		91.9	mg/kg	0.00919 %	✓	
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		0.19	mg/kg		0.175	mg/kg	0.0000175 %	✓	
24	acenaphthylene		205-917-1	208-96-8		0.11	mg/kg		0.101	mg/kg	0.0000101 %	✓	
25	acenaphthene		201-469-6	83-32-9		0.39	mg/kg		0.358	mg/kg	0.0000358 %	✓	
26	fluorene		201-695-5	86-73-7		0.28	mg/kg		0.257	mg/kg	0.0000257 %	✓	
27	phenanthrene		201-581-5	85-01-8		3.6	mg/kg		3.308	mg/kg	0.000331 %	✓	
28	anthracene		204-371-1	120-12-7		0.44	mg/kg		0.404	mg/kg	0.0000404 %	✓	
29	fluoranthene		205-912-4	206-44-0		4.9	mg/kg		4.503	mg/kg	0.00045 %	✓	
30	pyrene		204-927-3	129-00-0		4.3	mg/kg		3.952	mg/kg	0.000395 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		2.1	mg/kg		1.93	mg/kg	0.000193 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		2.4	mg/kg		2.206	mg/kg	0.000221 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		2.7	mg/kg		2.481	mg/kg	0.000248 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.88	mg/kg		0.809	mg/kg	0.0000809 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		2	mg/kg		1.838	mg/kg	0.000184 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		1.3	mg/kg		1.195	mg/kg	0.000119 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.31	mg/kg		0.285	mg/kg	0.0000285 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		1.4	mg/kg		1.287	mg/kg	0.000129 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols		P1186		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
42		xylene	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]		<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
										Total:	0.106 %		

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 HP 3 can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00919%)

WAC results for sample: TP23-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample FAILS the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	7.2	3	5
2	LOI (loss on ignition)	%	9.3	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	100	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	27	100	-
7	pH	pH	8.2	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.16	0.5	2
10	barium	mg/kg	0.062	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.046	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.072	0.5	10
16	nickel	mg/kg	0.0083	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.025	0.06	0.7
19	selenium	mg/kg	0.012	0.1	0.5
20	zinc	mg/kg	0.025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	3.2	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	51	500	800
26	TDS (total dissolved solids)	mg/kg	1100	4,000	60,000

Key

User supplied data
Inert WAC criteria fail
Non Hazardous WAC criteria fail

Classification of sample: TP23-0.80

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

Sample details

Sample name:
TP23-0.80
Sample Depth:
0.80-0.80 m
Moisture content:
17%
(wet weight 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: 17% Wet Weight 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	pH			PH		8.5	pH		8.5	pH	8.5 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.72	mg/kg	3.22	1.924	mg/kg	0.000192 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		1.5	mg/kg		1.245	mg/kg	0.000125 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		68	mg/kg	1.117	63.016	mg/kg	0.0063 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.3	mg/kg	1.142	1.233	mg/kg	0.000123 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.1	mg/kg	1.5	3.86	mg/kg	0.000386 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb_2O_4), pentoxide (Sb_2O_5), trisulphide (Sb_2S_3), pentasulphide (Sb_2S_5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		12	mg/kg		9.96	mg/kg	0.000996 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		47	mg/kg		39.01	mg/kg	0.0039 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.14	mg/kg		0.116	mg/kg	0.0000116 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		36	mg/kg	1.273	38.025	mg/kg	0.0038 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	35	mg/kg		29.05	mg/kg	0.00291 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.31	mg/kg	1.405	0.362	mg/kg	0.0000362 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		90	mg/kg	1.245	92.98	mg/kg	0.0093 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		21	mg/kg	1.462	25.475	mg/kg	0.00255 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.5	mg/kg		0.415	mg/kg	0.0000415 %	✓	
30	pyrene		204-927-3	129-00-0		0.41	mg/kg		0.34	mg/kg	0.000034 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.19	mg/kg		0.158	mg/kg	0.0000158 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		0.13	mg/kg		0.108	mg/kg	0.0000108 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0323 %		

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

WAC results for sample: TP23-0.80

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.4	3	5
2	LOI (loss on ignition)	%	3.3	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.5	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.015	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.017	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.012	0.5	10
13	copper	mg/kg	0.016	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.3	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.013	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.6	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	91	500	800
26	TDS (total dissolved solids)	mg/kg	710	4,000	60,000

Key

User supplied data

Classification of sample: TP24-0.30

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

Sample details

Sample name:
TP24-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
8%
(wet weight 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% Wet Weight 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	pH			PH		8.5	pH		8.5	pH	8.5 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		2	mg/kg	3.22	5.925	mg/kg	0.000592 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		5.8	mg/kg		5.336	mg/kg	0.000534 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		160	mg/kg	1.117	164.35	mg/kg	0.0164 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.8	mg/kg	1.142	1.892	mg/kg	0.000189 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.9	mg/kg	1.5	5.383	mg/kg	0.000538 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	5.4	mg/kg		4.968	mg/kg	0.000497 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		31	mg/kg		28.52	mg/kg	0.00285 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		82	mg/kg		75.44	mg/kg	0.00754 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.48	mg/kg		0.442	mg/kg	0.0000442 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		44	mg/kg	1.273	51.515	mg/kg	0.00515 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	260	mg/kg		239.2	mg/kg	0.0239 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.98	mg/kg	1.405	1.267	mg/kg	0.000127 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		310	mg/kg	1.245	354.992	mg/kg	0.0355 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		20	mg/kg	1.462	26.893	mg/kg	0.00269 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		1.2	mg/kg		1.104	mg/kg	0.00011 %	✓	
28	anthracene		204-371-1	120-12-7		0.25	mg/kg		0.23	mg/kg	0.000023 %	✓	
29	fluoranthene		205-912-4	206-44-0		1.7	mg/kg		1.564	mg/kg	0.000156 %	✓	
30	pyrene		204-927-3	129-00-0		1.4	mg/kg		1.288	mg/kg	0.000129 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.81	mg/kg		0.745	mg/kg	0.0000745 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		0.87	mg/kg		0.8	mg/kg	0.00008 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.1	mg/kg		1.012	mg/kg	0.000101 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.34	mg/kg		0.313	mg/kg	0.0000313 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.74	mg/kg		0.681	mg/kg	0.0000681 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.53	mg/kg		0.488	mg/kg	0.0000488 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.12	mg/kg		0.11	mg/kg	0.000011 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		0.5	mg/kg		0.46	mg/kg	0.000046 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0988 %		

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

WAC results for sample: TP24-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample FAILS the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	5.4	3	5
2	LOI (loss on ignition)	%	11	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	9.6	100	-
7	pH	pH	8.5	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.054	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.13	0.5	2
10	barium	mg/kg	0.12	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.039	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.12	0.5	10
16	nickel	mg/kg	0.0072	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.048	0.06	0.7
19	selenium	mg/kg	0.0078	0.1	0.5
20	zinc	mg/kg	0.027	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.1	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	60	500	800
26	TDS (total dissolved solids)	mg/kg	1300	4,000	60,000

Key

- User supplied data
- Inert WAC criteria fail
- Non Hazardous WAC criteria fail

Classification of sample: TP24-1.00

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

Sample details

Sample name:
TP24-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
5%
(wet weight 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% Wet Weight 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	pH			PH		8.4	pH		8.4	pH	8.4 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.2	mg/kg	3.22	3.671	mg/kg	0.000367 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		11	mg/kg		10.45	mg/kg	0.00105 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		73	mg/kg	1.117	77.43	mg/kg	0.00774 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.1	mg/kg	1.142	1.194	mg/kg	0.000119 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.9	mg/kg	1.5	4.133	mg/kg	0.000413 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.6	mg/kg		2.47	mg/kg	0.000247 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		19	mg/kg		18.05	mg/kg	0.00181 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		56	mg/kg		53.2	mg/kg	0.00532 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.32	mg/kg		0.304	mg/kg	0.0000304 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		30	mg/kg	1.273	36.269	mg/kg	0.00363 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	110	mg/kg		104.5	mg/kg	0.0104 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.48	mg/kg	1.405	0.641	mg/kg	0.0000641 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		110	mg/kg	1.245	130.073	mg/kg	0.013 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		17	mg/kg	1.462	23.604	mg/kg	0.00236 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		20	mg/kg		19	mg/kg	0.0019 %	✓	
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		0.14	mg/kg		0.133	mg/kg	0.0000133 %	✓	
24	acenaphthylene		205-917-1	208-96-8		0.12	mg/kg		0.114	mg/kg	0.0000114 %	✓	
25	acenaphthene		201-469-6	83-32-9		0.75	mg/kg		0.713	mg/kg	0.0000712 %	✓	
26	fluorene		201-695-5	86-73-7		0.6	mg/kg		0.57	mg/kg	0.000057 %	✓	
27	phenanthrene		201-581-5	85-01-8		7.4	mg/kg		7.03	mg/kg	0.000703 %	✓	
28	anthracene		204-371-1	120-12-7		2.3	mg/kg		2.185	mg/kg	0.000218 %	✓	
29	fluoranthene		205-912-4	206-44-0		11	mg/kg		10.45	mg/kg	0.00105 %	✓	
30	pyrene		204-927-3	129-00-0		8.9	mg/kg		8.455	mg/kg	0.000846 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		4.7	mg/kg		4.465	mg/kg	0.000447 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		4.4	mg/kg		4.18	mg/kg	0.000418 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		5	mg/kg		4.75	mg/kg	0.000475 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		1.8	mg/kg		1.71	mg/kg	0.000171 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		4.1	mg/kg		3.895	mg/kg	0.000389 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		2.6	mg/kg		2.47	mg/kg	0.000247 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.52	mg/kg		0.494	mg/kg	0.0000494 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		2.2	mg/kg		2.09	mg/kg	0.000209 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols		P1186		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
42		xylene	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]		<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
										Total:	0.0541 %		

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 HP 3 can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0019%)

WAC results for sample: TP24-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	3.7	3	5
2	LOI (loss on ignition)	%	5.3	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	20	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	57	100	-
7	pH	pH	8.4	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.022	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.093	0.5	2
10	barium	mg/kg	0.053	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0062	0.5	10
13	copper	mg/kg	0.037	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.16	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.026	0.06	0.7
19	selenium	mg/kg	0.007	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.7	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	73	500	800
26	TDS (total dissolved solids)	mg/kg	1100	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP25-0.30

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

Sample details

Sample name:
TP25-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
3.5%
(wet weight 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: 3.5% Wet Weight 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	pH			PH		8.7	pH		8.7	pH	8.7 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		**<LOD**
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		11	mg/kg		10.615	mg/kg	0.00106 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		150	mg/kg	1.117	161.614	mg/kg	0.0162 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.5	mg/kg	1.142	1.654	mg/kg	0.000165 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4	mg/kg	1.5	5.791	mg/kg	0.000579 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	3.1	mg/kg		2.992	mg/kg	0.000299 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		29	mg/kg		27.985	mg/kg	0.0028 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		130	mg/kg		125.45	mg/kg	0.0125 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.83	mg/kg		0.801	mg/kg	0.0000801 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		52	mg/kg	1.273	63.859	mg/kg	0.00639 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	280	mg/kg		270.2	mg/kg	0.027 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.8	mg/kg	1.405	1.085	mg/kg	0.000108 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		210	mg/kg	1.245	252.241	mg/kg	0.0252 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		26	mg/kg	1.462	36.67	mg/kg	0.00367 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		0.32	mg/kg		0.309	mg/kg	0.0000309 %	✓	
24	acenaphthylene		205-917-1	208-96-8		0.14	mg/kg		0.135	mg/kg	0.0000135 %	✓	
25	acenaphthene		201-469-6	83-32-9		0.17	mg/kg		0.164	mg/kg	0.0000164 %	✓	
26	fluorene		201-695-5	86-73-7		0.12	mg/kg		0.116	mg/kg	0.0000116 %	✓	
27	phenanthrene		201-581-5	85-01-8		1.7	mg/kg		1.64	mg/kg	0.000164 %	✓	
28	anthracene		204-371-1	120-12-7		0.49	mg/kg		0.473	mg/kg	0.0000473 %	✓	
29	fluoranthene		205-912-4	206-44-0		3.4	mg/kg		3.281	mg/kg	0.000328 %	✓	
30	pyrene		204-927-3	129-00-0		2.8	mg/kg		2.702	mg/kg	0.00027 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		1.7	mg/kg		1.64	mg/kg	0.000164 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		1.6	mg/kg		1.544	mg/kg	0.000154 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		2.2	mg/kg		2.123	mg/kg	0.000212 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.82	mg/kg		0.791	mg/kg	0.0000791 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.7	mg/kg		1.64	mg/kg	0.000164 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		1	mg/kg		0.965	mg/kg	0.0000965 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.28	mg/kg		0.27	mg/kg	0.000027 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		1.2	mg/kg		1.158	mg/kg	0.000116 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0993 %		

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

WAC results for sample: TP25-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample FAILS the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	6.3	3	5
2	LOI (loss on ignition)	%	5.3	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	20	100	-
7	pH	pH	8.7	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.03	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.11	0.5	2
10	barium	mg/kg	0.11	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.14	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.078	0.5	10
16	nickel	mg/kg	0.0067	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.02	0.06	0.7
19	selenium	mg/kg	0.01	0.1	0.5
20	zinc	mg/kg	0.04	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	4	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	54	500	800
26	TDS (total dissolved solids)	mg/kg	1400	4,000	60,000

Key

- User supplied data
- Inert WAC criteria fail
- Non Hazardous WAC criteria fail

Classification of sample: TP25-1.00

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

Sample details

Sample name:
TP25-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
4.4%
(wet weight 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: 4.4% Wet Weight 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	pH			PH		8.5	pH		8.5	pH	8.5 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		**<LOD**
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		1.5	mg/kg		1.434	mg/kg	0.000143 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		76	mg/kg	1.117	81.121	mg/kg	0.00811 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.6	mg/kg	1.142	1.747	mg/kg	0.000175 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.8	mg/kg	1.5	5.45	mg/kg	0.000545 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.3	mg/kg		2.199	mg/kg	0.00022 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		26	mg/kg		24.856	mg/kg	0.00249 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		74	mg/kg		70.744	mg/kg	0.00707 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.32	mg/kg		0.306	mg/kg	0.0000306 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		47	mg/kg	1.273	57.18	mg/kg	0.00572 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	84	mg/kg		80.304	mg/kg	0.00803 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.35	mg/kg	1.405	0.47	mg/kg	0.000047 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		140	mg/kg	1.245	166.593	mg/kg	0.0167 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		27	mg/kg	1.462	37.726	mg/kg	0.00377 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.27	mg/kg		0.258	mg/kg	0.0000258 %	✓	
30	pyrene		204-927-3	129-00-0		0.2	mg/kg		0.191	mg/kg	0.0000191 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.12	mg/kg		0.115	mg/kg	0.0000115 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		0.14	mg/kg		0.134	mg/kg	0.0000134 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0546 %		

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

WAC results for sample: TP25-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	2.7	3	5
2	LOI (loss on ignition)	%	4.2	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.5	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.016	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.032	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0063	0.5	10
13	copper	mg/kg	0.025	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.42	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.018	0.06	0.7
19	selenium	mg/kg	0.0071	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.8	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	67	500	800
26	TDS (total dissolved solids)	mg/kg	1100	4,000	60,000

Key

User supplied data

Classification of sample: TP26-0.30

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

Sample details

Sample name:
TP26-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
6.2%
(wet weight 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: 6.2% Wet Weight 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	pH			PH		8.6	pH		8.6	pH	8.6 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.83	mg/kg	3.22	2.507	mg/kg	0.000251 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		4	mg/kg		3.752	mg/kg	0.000375 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		98	mg/kg	1.117	102.634	mg/kg	0.0103 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.4	mg/kg	1.142	1.5	mg/kg	0.00015 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.9	mg/kg	1.5	4.081	mg/kg	0.000408 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb_2O_4), pentoxide (Sb_2O_5), trisulphide (Sb_2S_3), pentasulphide (Sb_2S_5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		25	mg/kg		23.45	mg/kg	0.00235 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		85	mg/kg		79.73	mg/kg	0.00797 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.4	mg/kg		0.375	mg/kg	0.0000375 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		36	mg/kg	1.273	42.973	mg/kg	0.0043 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	200	mg/kg		187.6	mg/kg	0.0188 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.34	mg/kg	1.405	0.448	mg/kg	0.0000448 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		110	mg/kg	1.245	128.43	mg/kg	0.0128 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		19	mg/kg	1.462	26.048	mg/kg	0.0026 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		0.33	mg/kg		0.31	mg/kg	0.000031 %	✓	
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.4	mg/kg		0.375	mg/kg	0.0000375 %	✓	
30	pyrene		204-927-3	129-00-0		0.37	mg/kg		0.347	mg/kg	0.0000347 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.18	mg/kg		0.169	mg/kg	0.0000169 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		0.29	mg/kg		0.272	mg/kg	0.0000272 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.29	mg/kg		0.272	mg/kg	0.0000272 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.22	mg/kg		0.206	mg/kg	0.0000206 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0621 %		

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

WAC results for sample: TP26-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	2.8	3	5
2	LOI (loss on ignition)	%	4.9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	2.1	100	-
7	pH	pH	8.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.038	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.031	0.5	2
10	barium	mg/kg	0.065	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0084	0.5	10
13	copper	mg/kg	0.025	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.11	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.01	0.06	0.7
19	selenium	mg/kg	0.0054	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	3	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	1200	4,000	60,000

Key

User supplied data

Classification of sample: TP26-1.20

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

Sample details

Sample name:
TP26-1.20
Sample Depth:
1.20-1.20 m
Moisture content:
9.3%
(wet weight 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: 9.3% Wet Weight 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	pH			PH		8.5	pH		8.5	pH	8.5 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.5	mg/kg	3.22	4.381	mg/kg	0.000438 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		3	mg/kg		2.721	mg/kg	0.000272 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		73	mg/kg	1.117	73.925	mg/kg	0.00739 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1	mg/kg	1.142	1.036	mg/kg	0.000104 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.5	mg/kg	1.5	3.402	mg/kg	0.00034 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		13	mg/kg		11.791	mg/kg	0.00118 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		38	mg/kg		34.466	mg/kg	0.00345 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.26	mg/kg		0.236	mg/kg	0.0000236 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		26	mg/kg	1.273	30.01	mg/kg	0.003 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	57	mg/kg		51.699	mg/kg	0.00517 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.26	mg/kg	1.405	0.331	mg/kg	0.0000331 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		64	mg/kg	1.245	72.253	mg/kg	0.00723 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		17	mg/kg	1.462	22.536	mg/kg	0.00225 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		0.21	mg/kg		0.19	mg/kg	0.000019 %	✓	
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.24	mg/kg		0.218	mg/kg	0.0000218 %	✓	
30	pyrene		204-927-3	129-00-0		0.22	mg/kg		0.2	mg/kg	0.00002 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.13	mg/kg		0.118	mg/kg	0.0000118 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		0.17	mg/kg		0.154	mg/kg	0.0000154 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										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

WAC results for sample: TP26-1.20

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	2.6	3	5
2	LOI (loss on ignition)	%	5.6	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.5	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.03	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.022	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.012	0.5	10
13	copper	mg/kg	0.015	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.4	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.011	0.06	0.7
19	selenium	mg/kg	0.0057	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.2	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	120	500	800
26	TDS (total dissolved solids)	mg/kg	780	4,000	60,000

Key

User supplied data

Classification of sample: TP27-0.30

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

Sample details

Sample name:
TP27-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
20%
(wet weight 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: 20% Wet Weight 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		pH			PH		8.4	pH		8.4	pH	8.4 pH		
2		boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.6	mg/kg	3.22	4.121	mg/kg	0.000412 %	✓	
3		sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		4.8	mg/kg		3.84	mg/kg	0.000384 %	✓	
4		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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5		barium { barium oxide }		215-127-9	1304-28-5		76	mg/kg	1.117	67.884	mg/kg	0.00679 %	✓	
6		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.1	mg/kg	1.142	1.005	mg/kg	0.000101 %	✓	
7		molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.5	mg/kg	1.5	4.201	mg/kg	0.00042 %	✓	
8		antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.5	mg/kg		2	mg/kg	0.0002 %	✓	
9		arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		20	mg/kg		16	mg/kg	0.0016 %	✓	
10		granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		71	mg/kg		56.8	mg/kg	0.00568 %	✓	
11		mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.63	mg/kg		0.504	mg/kg	0.0000504 %	✓	
12		nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		37	mg/kg	1.273	37.669	mg/kg	0.00377 %	✓	
13		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	120	mg/kg		96	mg/kg	0.0096 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.5	mg/kg	1.405	0.562	mg/kg	0.0000562 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		100	mg/kg	1.245	99.577	mg/kg	0.00996 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		22	mg/kg	1.462	25.723	mg/kg	0.00257 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.12	mg/kg		0.096	mg/kg	0.0000096 %	✓	
30	pyrene		204-927-3	129-00-0		0.1	mg/kg		0.08	mg/kg	0.000008 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.043 %		

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

WAC results for sample: TP27-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	3.1	3	5
2	LOI (loss on ignition)	%	6.1	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.4	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.057	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.031	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0087	0.5	10
13	copper	mg/kg	0.023	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.37	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.018	0.06	0.7
19	selenium	mg/kg	0.0079	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.8	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	150	500	800
26	TDS (total dissolved solids)	mg/kg	1300	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP27-1.00

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

Sample details

Sample name:
TP27-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
17%
(wet weight 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: 17% Wet Weight 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	pH			PH		8.4	pH		8.4	pH	8.4 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.43	mg/kg	3.22	1.149	mg/kg	0.000115 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		2.2	mg/kg		1.826	mg/kg	0.000183 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		41	mg/kg	1.117	37.995	mg/kg	0.0038 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.88	mg/kg	1.142	0.834	mg/kg	0.0000834 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3	mg/kg	1.5	3.735	mg/kg	0.000374 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb_2O_4), pentoxide (Sb_2O_5), trisulphide (Sb_2S_3), pentasulphide (Sb_2S_5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		11	mg/kg		9.13	mg/kg	0.000913 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		23	mg/kg		19.09	mg/kg	0.00191 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		26	mg/kg	1.273	27.463	mg/kg	0.00275 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	18	mg/kg		14.94	mg/kg	0.00149 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.2 mg/kg	1.405	<0.281 mg/kg	<0.0000281 %		<LOD
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		58 mg/kg	1.245	59.921 mg/kg	0.00599 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		15 mg/kg	1.462	18.196 mg/kg	0.00182 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	pyrene		204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.021 %		

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

WAC results for sample: TP27-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.4	3	5
2	LOI (loss on ignition)	%	7.3	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.4	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.049	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.005	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0088	0.5	10
13	copper	mg/kg	0.011	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.29	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.0069	0.06	0.7
19	selenium	mg/kg	0.0065	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	3.2	10	150
23	sulphate	mg/kg	36	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	62	500	800
26	TDS (total dissolved solids)	mg/kg	840	4,000	60,000

Key

User supplied data

Classification of sample: TP28-0.20

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

Sample details

Sample name:
TP28-0.20
Sample Depth:
0.20-0.30 m
Moisture content:
8%
(wet weight 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% Wet Weight Moisture Correction applied (MC)

#		Determinand	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number									
1		pH PH		8.5	pH		8.5	pH	8.5 pH		
2		boron { diboron trioxide; boric oxide } 005-008-00-8 / 215-125-8 / 1303-86-2		0.68	mg/kg	3.22	2.014	mg/kg	0.000201 %	✓	
3		sulfur { sulfur } 016-094-00-1 / 231-722-6 / 7704-34-9		4.9	mg/kg		4.508	mg/kg	0.000451 %	✓	
4		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		<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5		barium { barium oxide } 215-127-9 / 1304-28-5		120	mg/kg	1.117	123.262	mg/kg	0.0123 %	✓	
6		cadmium { cadmium oxide } 048-002-00-0 / 215-146-2 / 1306-19-0		1.3	mg/kg	1.142	1.366	mg/kg	0.000137 %	✓	
7		molybdenum { molybdenum(VI) oxide } 042-001-00-9 / 215-204-7 / 1313-27-5		3.2	mg/kg	1.5	4.417	mg/kg	0.000442 %	✓	
8		antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex } 051-003-00-9	1	2.4	mg/kg		2.208	mg/kg	0.000221 %	✓	
9		arsenic { arsenic } 033-001-00-X / 231-148-6 / 7440-38-2		25	mg/kg		23	mg/kg	0.0023 %	✓	
10		granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm] 029-024-00-X / 231-159-6 / 7440-50-8		110	mg/kg		101.2	mg/kg	0.0101 %	✓	
11		mercury { mercury } 080-001-00-0 / 231-106-7 / 7439-97-6		0.62	mg/kg		0.57	mg/kg	0.000057 %	✓	
12		nickel { nickel(II) oxide (nickel monoxide) } 028-003-00-2 / 215-215-7 [1] 234-323-5 [2] - [3] / 1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		44	mg/kg	1.273	51.515	mg/kg	0.00515 %	✓	
13		lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6	1	160	mg/kg		147.2	mg/kg	0.0147 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.51	mg/kg	1.405	0.659	mg/kg	0.0000659 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		130	mg/kg	1.245	148.868	mg/kg	0.0149 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		23	mg/kg	1.462	30.927	mg/kg	0.00309 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		0.27	mg/kg		0.248	mg/kg	0.0000248 %	✓	
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		0.42	mg/kg		0.386	mg/kg	0.0000386 %	✓	
26	fluorene		201-695-5	86-73-7		0.28	mg/kg		0.258	mg/kg	0.0000258 %	✓	
27	phenanthrene		201-581-5	85-01-8		3.6	mg/kg		3.312	mg/kg	0.000331 %	✓	
28	anthracene		204-371-1	120-12-7		0.48	mg/kg		0.442	mg/kg	0.0000442 %	✓	
29	fluoranthene		205-912-4	206-44-0		3.7	mg/kg		3.404	mg/kg	0.00034 %	✓	
30	pyrene		204-927-3	129-00-0		3.4	mg/kg		3.128	mg/kg	0.000313 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		1.5	mg/kg		1.38	mg/kg	0.000138 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		1.8	mg/kg		1.656	mg/kg	0.000166 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		2	mg/kg		1.84	mg/kg	0.000184 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.62	mg/kg		0.57	mg/kg	0.000057 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.4	mg/kg		1.288	mg/kg	0.000129 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.8	mg/kg		0.736	mg/kg	0.0000736 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.25	mg/kg		0.23	mg/kg	0.000023 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		1.1	mg/kg		1.012	mg/kg	0.000101 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0674 %		

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

WAC results for sample: TP28-0.20

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	3.9	3	5
2	LOI (loss on ignition)	%	4	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	57	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	22	100	-
7	pH	pH	8.5	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.021	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.1	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0056	0.5	10
13	copper	mg/kg	0.042	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.22	0.5	10
16	nickel	mg/kg	0.0052	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.031	0.06	0.7
19	selenium	mg/kg	0.0066	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	3.9	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	50	500	800
26	TDS (total dissolved solids)	mg/kg	2000	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP28-1.00

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

Sample details

Sample name:
TP28-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
9.1%
(wet weight 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: 9.1% Wet Weight 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	pH			PH		8.7	pH		8.7	pH	8.7 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		**<LOD**
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		3	mg/kg		2.727	mg/kg	0.000273 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		74	mg/kg	1.117	75.103	mg/kg	0.00751 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.6	mg/kg	1.142	2.7	mg/kg	0.00027 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4.1	mg/kg	1.5	5.591	mg/kg	0.000559 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2	mg/kg		1.818	mg/kg	0.000182 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		19	mg/kg		17.271	mg/kg	0.00173 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		44	mg/kg		39.996	mg/kg	0.004 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.11	mg/kg		0.1	mg/kg	0.00001 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		54	mg/kg	1.273	62.466	mg/kg	0.00625 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	29	mg/kg		26.361	mg/kg	0.00264 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.28	mg/kg	1.405	0.358	mg/kg	0.0000358 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		76	mg/kg	1.245	85.99	mg/kg	0.0086 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		19	mg/kg	1.462	25.243	mg/kg	0.00252 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30	pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0361 %		

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

WAC results for sample: TP28-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.7	3	5
2	LOI (loss on ignition)	%	0.91	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	28	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.7	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.019	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.0045	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0067	0.5	10
13	copper	mg/kg	0.011	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.17	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	3.7	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	710	4,000	60,000

Key

User supplied data

Classification of sample: TP30-0.30

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

Sample details

Sample name:
TP30-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
8.1%
(wet weight 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: 8.1% Wet Weight 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	pH			PH		8.4	pH		8.4	pH	8.4 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.6	mg/kg	3.22	4.735	mg/kg	0.000473 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		5.7	mg/kg		5.238	mg/kg	0.000524 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		130	mg/kg	1.117	133.389	mg/kg	0.0133 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.6	mg/kg	1.142	1.68	mg/kg	0.000168 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.3	mg/kg	1.5	4.55	mg/kg	0.000455 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.5	mg/kg		2.298	mg/kg	0.00023 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		28	mg/kg		25.732	mg/kg	0.00257 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		110	mg/kg		101.09	mg/kg	0.0101 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.66	mg/kg		0.607	mg/kg	0.0000607 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		44	mg/kg	1.273	51.459	mg/kg	0.00515 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	250	mg/kg		229.75	mg/kg	0.023 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.76	mg/kg	1.405	0.981	mg/kg	0.0000981 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		180	mg/kg	1.245	205.901	mg/kg	0.0206 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		24	mg/kg	1.462	32.236	mg/kg	0.00322 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		0.16	mg/kg		0.147	mg/kg	0.0000147 %	✓	
24	acenaphthylene		205-917-1	208-96-8		0.1	mg/kg		0.0919	mg/kg	0.00000919 %	✓	
25	acenaphthene		201-469-6	83-32-9		0.13	mg/kg		0.119	mg/kg	0.0000119 %	✓	
26	fluorene		201-695-5	86-73-7		0.12	mg/kg		0.11	mg/kg	0.000011 %	✓	
27	phenanthrene		201-581-5	85-01-8		1.4	mg/kg		1.287	mg/kg	0.000129 %	✓	
28	anthracene		204-371-1	120-12-7		0.26	mg/kg		0.239	mg/kg	0.0000239 %	✓	
29	fluoranthene		205-912-4	206-44-0		1.7	mg/kg		1.562	mg/kg	0.000156 %	✓	
30	pyrene		204-927-3	129-00-0		1.5	mg/kg		1.379	mg/kg	0.000138 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.83	mg/kg		0.763	mg/kg	0.0000763 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		0.99	mg/kg		0.91	mg/kg	0.000091 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.1	mg/kg		1.011	mg/kg	0.000101 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.35	mg/kg		0.322	mg/kg	0.0000322 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.84	mg/kg		0.772	mg/kg	0.0000772 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.49	mg/kg		0.45	mg/kg	0.000045 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		0.5	mg/kg		0.46	mg/kg	0.0000459 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0822 %		

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

WAC results for sample: TP30-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample FAILS the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	6.2	3	5
2	LOI (loss on ignition)	%	9.1	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	180	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	11	100	-
7	pH	pH	8.4	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.017	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.04	0.5	2
10	barium	mg/kg	0.092	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.062	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.059	0.5	10
16	nickel	mg/kg	0.0074	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.0099	0.06	0.7
19	selenium	mg/kg	0.0087	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	3	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	62	500	800
26	TDS (total dissolved solids)	mg/kg	1600	4,000	60,000

Key

- User supplied data
- Inert WAC criteria fail
- Non Hazardous WAC criteria fail

Classification of sample: TP30-0.90

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

Sample details

Sample name:
TP30-0.90
Sample Depth:
0.90-0.90 m
Moisture content:
10%
(wet weight 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% Wet Weight 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	pH			PH		8.6	pH		8.6	pH	8.6 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.4	mg/kg	3.22	1.159	mg/kg	0.000116 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		1.5	mg/kg		1.35	mg/kg	0.000135 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		68	mg/kg	1.117	68.33	mg/kg	0.00683 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.6	mg/kg	1.142	1.645	mg/kg	0.000164 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.2	mg/kg	1.5	2.97	mg/kg	0.000297 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb_2O_4), pentoxide (Sb_2O_5), trisulphide (Sb_2S_3), pentasulphide (Sb_2S_5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		14	mg/kg		12.6	mg/kg	0.00126 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		36	mg/kg		32.4	mg/kg	0.00324 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.15	mg/kg		0.135	mg/kg	0.0000135 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		36	mg/kg	1.273	41.232	mg/kg	0.00412 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	41	mg/kg		36.9	mg/kg	0.00369 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.2	mg/kg	1.405	<0.281	mg/kg	<0.0000281 %		<LOD
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		67	mg/kg	1.245	75.056	mg/kg	0.00751 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		17	mg/kg	1.462	22.362	mg/kg	0.00224 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.36	mg/kg		0.324	mg/kg	0.0000324 %	✓	
30	pyrene		204-927-3	129-00-0		0.32	mg/kg		0.288	mg/kg	0.0000288 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.16	mg/kg		0.144	mg/kg	0.0000144 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		0.19	mg/kg		0.171	mg/kg	0.0000171 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0313 %		

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

WAC results for sample: TP30-0.90

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.4	3	5
2	LOI (loss on ignition)	%	1.6	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.009	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.013	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.01	0.5	10
13	copper	mg/kg	0.016	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.16	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.0068	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	3.7	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	910	4,000	60,000

Key

User supplied data

Classification of sample: TP31-0.30

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

Sample details

Sample name:
TP31-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
8.7%
(wet weight 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: 8.7% Wet Weight 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	pH			PH		8.3	pH		8.3	pH	8.3 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.9	mg/kg	3.22	5.586	mg/kg	0.000559 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		7.6	mg/kg		6.939	mg/kg	0.000694 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		90	mg/kg	1.117	91.743	mg/kg	0.00917 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.1	mg/kg	1.142	1.147	mg/kg	0.000115 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.4	mg/kg	1.5	3.287	mg/kg	0.000329 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb_2O_4), pentoxide (Sb_2O_5), trisulphide (Sb_2S_3), pentasulphide (Sb_2S_5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		18	mg/kg		16.434	mg/kg	0.00164 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		69	mg/kg		62.997	mg/kg	0.0063 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.46	mg/kg		0.42	mg/kg	0.000042 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		32	mg/kg	1.273	37.18	mg/kg	0.00372 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	150	mg/kg		136.95	mg/kg	0.0137 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.5	mg/kg	1.405	0.641	mg/kg	0.0000641 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		130	mg/kg	1.245	147.735	mg/kg	0.0148 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		16	mg/kg	1.462	21.35	mg/kg	0.00214 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		1.2	mg/kg		1.096	mg/kg	0.00011 %	✓	
28	anthracene		204-371-1	120-12-7		0.23	mg/kg		0.21	mg/kg	0.000021 %	✓	
29	fluoranthene		205-912-4	206-44-0		1.7	mg/kg		1.552	mg/kg	0.000155 %	✓	
30	pyrene		204-927-3	129-00-0		1.6	mg/kg		1.461	mg/kg	0.000146 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.81	mg/kg		0.74	mg/kg	0.000074 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		0.93	mg/kg		0.849	mg/kg	0.0000849 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.1	mg/kg		1.004	mg/kg	0.0001 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.31	mg/kg		0.283	mg/kg	0.0000283 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.78	mg/kg		0.712	mg/kg	0.0000712 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.54	mg/kg		0.493	mg/kg	0.0000493 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.13	mg/kg		0.119	mg/kg	0.0000119 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		0.64	mg/kg		0.584	mg/kg	0.0000584 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0556 %		

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

WAC results for sample: TP31-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample FAILS the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	7.5	3	5
2	LOI (loss on ignition)	%	11	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	35	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	10	100	-
7	pH	pH	8.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.004	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.051	0.5	2
10	barium	mg/kg	0.098	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.064	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.037	0.5	10
16	nickel	mg/kg	0.008	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.0074	0.06	0.7
19	selenium	mg/kg	0.0064	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.8	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	73	500	800
26	TDS (total dissolved solids)	mg/kg	1600	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail
	Non Hazardous WAC criteria fail

Classification of sample: TP31-1.50

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

Sample details

Sample name:
TP31-1.50
Sample Depth:
1.50-1.50 m
Moisture content:
12%
(wet weight 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% Wet Weight 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	pH			PH		8.5	pH		8.5	pH	8.5 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.52	mg/kg	3.22	1.473	mg/kg	0.000147 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		53	mg/kg	1.117	52.074	mg/kg	0.00521 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.83	mg/kg	1.142	0.834	mg/kg	0.0000834 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.6	mg/kg	1.5	3.432	mg/kg	0.000343 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb_2O_4), pentoxide (Sb_2O_5), trisulphide (Sb_2S_3), pentasulphide (Sb_2S_5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		8.9	mg/kg		7.832	mg/kg	0.000783 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		17	mg/kg		14.96	mg/kg	0.0015 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.13	mg/kg		0.114	mg/kg	0.0000114 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		24	mg/kg	1.273	26.877	mg/kg	0.00269 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	28	mg/kg		24.64	mg/kg	0.00246 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.2 mg/kg	1.405	<0.281 mg/kg	<0.0000281 %		<LOD
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		91 mg/kg	1.245	99.677 mg/kg	0.00997 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		23 mg/kg	1.462	29.582 mg/kg	0.00296 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	pyrene		204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.0279 %		

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

WAC results for sample: TP31-1.50

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.66	3	5
2	LOI (loss on ignition)	%	2.1	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.5	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.015	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.0055	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0052	0.5	10
13	copper	mg/kg	0.011	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.2	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	3.1	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	100	500	800
26	TDS (total dissolved solids)	mg/kg	780	4,000	60,000

Key

User supplied data

Classification of sample: TP32-0.30

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

Sample details

Sample name:
TP32-0.30
Sample Depth:
0.30-0.30 m
Moisture content:
10%
(wet weight 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% Wet Weight 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	pH			PH		8.4	pH		8.4	pH	8.4 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.9	mg/kg	3.22	5.506	mg/kg	0.000551 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		7.1	mg/kg		6.39	mg/kg	0.000639 %	✓	
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		160	mg/kg	1.117	160.777	mg/kg	0.0161 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.6	mg/kg	1.142	1.645	mg/kg	0.000164 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4.9	mg/kg	1.5	6.616	mg/kg	0.000662 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	3.9	mg/kg		3.51	mg/kg	0.000351 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		43	mg/kg		38.7	mg/kg	0.00387 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		110	mg/kg		99	mg/kg	0.0099 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.87	mg/kg		0.783	mg/kg	0.0000783 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		65	mg/kg	1.273	74.447	mg/kg	0.00744 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	760	mg/kg		684	mg/kg	0.0684 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.62	mg/kg	1.405	0.784	mg/kg	0.0000784 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		210	mg/kg	1.245	235.251	mg/kg	0.0235 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		39	mg/kg	1.462	51.301	mg/kg	0.00513 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		**<LOD**
18	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
27	phenanthrene		201-581-5	85-01-8		1.3	mg/kg		1.17	mg/kg	0.000117 %	✓	
28	anthracene		204-371-1	120-12-7		0.17	mg/kg		0.153	mg/kg	0.0000153 %	✓	
29	fluoranthene		205-912-4	206-44-0		1.4	mg/kg		1.26	mg/kg	0.000126 %	✓	
30	pyrene		204-927-3	129-00-0		1.3	mg/kg		1.17	mg/kg	0.000117 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.67	mg/kg		0.603	mg/kg	0.0000603 %	✓	
32	chrysene	601-048-00-0	205-923-4	218-01-9		0.76	mg/kg		0.684	mg/kg	0.0000684 %	✓	
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.79	mg/kg		0.711	mg/kg	0.0000711 %	✓	
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.27	mg/kg		0.243	mg/kg	0.0000243 %	✓	
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.58	mg/kg		0.522	mg/kg	0.0000522 %	✓	
36	indeno[123-cd]pyrene		205-893-2	193-39-5		0.26	mg/kg		0.234	mg/kg	0.0000234 %	✓	
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.1	mg/kg		0.09	mg/kg	0.000009 %	✓	
38	benzo[ghi]perylene		205-883-8	191-24-2		0.46	mg/kg		0.414	mg/kg	0.0000414 %	✓	
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<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									
41		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
				P1186									
42		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		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]									
										Total:	0.139 %		

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

WAC results for sample: TP32-0.30

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	3.7	3	5
2	LOI (loss on ignition)	%	6.4	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	48	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	8.1	100	-
7	pH	pH	8.4	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.008	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.17	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.047	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.035	0.5	10
16	nickel	mg/kg	0.0061	0.4	10
17	lead	mg/kg	0.0052	0.5	10
18	antimony	mg/kg	0.015	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	57	800	15,000
22	fluoride	mg/kg	3.2	10	150
23	sulphate	mg/kg	33	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	120	500	800
26	TDS (total dissolved solids)	mg/kg	970	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP32-1.00

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

Sample details

Sample name:
TP32-1.00
Sample Depth:
1.00-1.00 m
Moisture content:
11%
(wet weight 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% Wet Weight 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	pH			PH		8.7	pH		8.7	pH	8.7 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		**<LOD**
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
4	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				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		97	mg/kg	1.117	96.388	mg/kg	0.00964 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.9	mg/kg	1.142	2.948	mg/kg	0.000295 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		5.2	mg/kg	1.5	6.943	mg/kg	0.000694 %	✓	
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	2.5	mg/kg		2.225	mg/kg	0.000223 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		27	mg/kg		24.03	mg/kg	0.0024 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		61	mg/kg		54.29	mg/kg	0.00543 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.18	mg/kg		0.16	mg/kg	0.000016 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		65	mg/kg	1.273	73.619	mg/kg	0.00736 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	52	mg/kg		46.28	mg/kg	0.00463 %	✓	

#	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	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.42	mg/kg	1.405	0.525	mg/kg	0.0000525 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		97	mg/kg	1.245	107.456	mg/kg	0.0107 %	✓	
16	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		26	mg/kg	1.462	33.82	mg/kg	0.00338 %	✓	
17	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
18	TPH (C6 to C40) petroleum group			TPH		16	mg/kg		14.24	mg/kg	0.00142 %	✓	
19	benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		0.14	mg/kg		0.125	mg/kg	0.0000125 %	✓	
30	pyrene		204-927-3	129-00-0		0.16	mg/kg		0.142	mg/kg	0.0000142 %	✓	
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<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									
41		monohydric phenols		P1186		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
42		xylene	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]		<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
										Total:	0.0469 %		

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 HP 3 can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00142%)

WAC results for sample: TP32-1.00

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.73	3	5
2	LOI (loss on ignition)	%	1.5	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.7	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.008	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.011	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0063	0.5	10
13	copper	mg/kg	0.012	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.18	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	0.007	0.06	0.7
19	selenium	mg/kg	0.0053	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	3.4	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	87	500	800
26	TDS (total dissolved solids)	mg/kg	840	4,000	60,000

Key

User supplied data

Appendix A: Classifier defined and non CLP determinands

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

barium oxide (EC Number: 215-127-9, CAS Number: 1304-28-5)

Description/Comments: Data from ECHA's C&L Inventory Database, Sigma Aldrich SDS dated 6/2/20
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/88825
Data source date: 02 Apr 2020
Hazard Statements: Acute Tox. 3 H301 , Skin Corr. 1B H314 , Eye Dam. 1 H318 , Acute Tox. 1 H332

arsenic (EC Number: 231-148-6, CAS Number: 7440-38-2)

CLP index number: 033-001-00-X
Description/Comments: Worst Case: IARC considers arsenic Group 1; Carcinogenic to humans
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Hazard Statement(s): Carc. 1A H350
Reason for additional Hazards Statement(s):
29 Sep 2015 - Carc. 1A H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

lead compounds with the exception of those specified elsewhere in this Annex

CLP index number: 082-001-00-6
Description/Comments: Least-worst case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following CLP protocols, considers many simple lead compounds to be Carcinogenic category 2
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
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 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html. Review date 29/09/2015

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

Description/Comments: Data from ECHA's C&L inventory database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 30 Apr 2020
Hazard Statements: Acute Tox. 4 H302 , Skin Sens. 1 H317 , Eye Irrit. 2 H319

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

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

- **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

- **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

- **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

- **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

- **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

- **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

- **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

- **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

- **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

- **coronene** (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source: http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2 H371

- **polychlorobiphenyls; PCB** (EC Number: 215-648-1, CAS Number: 1336-36-3)

CLP index number: 602-039-00-4
Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans; POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Hazard Statement(s): Carc. 1A H350
Reason for additional Hazards Statement(s):
29 Sep 2015 - Carc. 1A H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

- **monohydric phenols** (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
Data source: CLP combined data
Data source date: 26 Mar 2019
Hazard Statements: Acute Tox. 3 H301 , Acute Tox. 3 H311 , Acute Tox. 3 H331 , Skin Corr. 1B H314 , Skin Corr. 1B H314 >= 3 %, Skin Irrit. 2 H315 1 £ conc. < 3 %, Eye Irrit. 2 H319 1 £ conc. < 3 %, Muta. 2 H341 , STOT RE 2 H373 , Aquatic Chronic 2 H411

Appendix B: Rationale for selection of metal species

boron {diboron trioxide; boric oxide}

Diboron trioxide used as the most hazardous species.

sulfur {sulfur}

chemtest reports Elemental sulfur using this CAS

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}

Available species

barium {barium oxide}

Chromium VII at limits of detection. Barium oxide used as the next most hazardous species. No chromate present.

cadmium {cadmium oxide}

Chromium VII at limits of detection. Cadmium oxide used as the next most hazardous species. No chromate present.

molybdenum {molybdenum(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight.

antimony {antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex}

Chromium VI at limits of detection. Antimony compounds used as the next most hazardous species. No chromate present.

arsenic {arsenic}

Worst Case Scenario

mercury {mercury}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel(II) oxide (nickel monoxide)}

Chromium VI at limits of detection. Nickel oxide used as the next most hazardous species. No chromate present.

lead {lead compounds with the exception of those specified elsewhere in this Annex}

Chromium VI at limits of detection. Lead compounds used as the next most hazardous species. No chromate present.

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

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil.

zinc {zinc oxide}

Chromium VI at limits of detection. Zinc oxide used as the next most hazardous species. No chromate present.

chromium in chromium(III) compounds {chromium(III) oxide}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments.

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018
HazWasteOnline Classification Engine Version: 2021.246.4869.9247 (05 Sep 2021)
HazWasteOnline Database: 2021.246.4869.9247 (05 Sep 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

Survey Data

Survey Data

Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
Boreholes					
BH01	716933.204	729245.309	41.09	317007.864	229217.978
BH02	716986.715	729198.826	43.22	317061.387	229171.485
BH03	717144.075	729269.977	44.80	317218.780	229242.652
BH04	717285.890	729232.584	43.11	317360.625	229205.252
BH05	717343.692	729264.246	41.44	317418.440	229236.922
BH06	716933.111	729145.958	43.98	317007.772	229118.605
BH07	717074.689	729141.537	45.20	317149.380	229114.184
BH08	717225.402	729148.228	43.24	317300.125	229120.878
BH09	717318.053	729168.875	42.05	317392.796	229141.530
BH10	717262.520	729108.428	43.35	317337.252	229081.069
BH11	717138.431	729040.155	45.15	317213.137	229012.780
BH12	717237.096	729035.114	44.05	317311.823	229007.739
BH13	717291.629	729059.971	43.64	317366.367	229032.602
BH14	717342.431	729045.867	43.50	317417.180	229018.495
BH15	717190.833	728984.102	44.51	317265.550	228956.716
BH16	717118.126	728960.452	45.00	317192.828	228933.060
Trial Pits					
TP01	717085.526	729239.061	44.25	317160.218	229211.729
TP02	717251.172	729280.658	43.99	317325.899	229253.336
TP03	717329.636	729286.17	41.57	317404.38	229258.85
TP04	716953.047	729241.32	41.79	317027.711	229213.988
TP05	716922.392	729191.442	43.63	316997.05	229164.099
TP06	716961.576	729197.572	42.92	317036.242	229170.231
TP07	717300.745	729245.984	42.50	317375.483	229218.655
TP08	717339.782	729253.814	40.92	317414.529	229226.487
TP09	716960.867	729152.35	43.95	317035.533	229124.999
TP10	717000.196	729150.369	44.08	317074.871	229123.018
TP11	717039.859	729149.313	44.70	317114.542	229121.962
TP12	717073.856	729116.202	45.63	317148.547	229088.844
TP13	717131.226	729149.861	44.70	317205.929	229122.51
TP14	717202.755	729166.921	44.28	317277.473	229139.574
TP15	717288.936	729191.894	42.38	317363.672	229164.553
TP16	717317.117	729219.44	41.56	317391.859	229192.106
TP17	717200.401	729124.677	43.46	317275.119	229097.321
TP18	717217.891	729130.297	43.22	317292.613	229102.943
TP19	717253.959	729136.456	42.93	317328.688	229109.103
TP20	717097.828	729043.115	45.17	317172.525	229015.741

Survey Data

Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
TP22	717191.571	729077.467	43.94	317266.288	229050.101
TP23	717249.227	729086.732	43.57	317323.956	229059.368
TP24	717267.34	729099.545	43.92	317342.073	229072.184
TP25	717124.211	729009.977	44.91	317198.914	228982.596
TP26	717162.543	729028.032	44.86	317237.254	229000.655
TP27	717196.339	729050.889	43.80	317271.057	229023.517
TP28	717273.304	729052.714	43.86	317348.038	229025.343
TP29	717324.76	729067.262	43.40	317399.505	229039.895
TP30	717136.958	728977.26	44.78	317211.664	228949.872
TP31	717176.242	728991.286	44.56	317250.956	228963.901
TP32	717215.982	729002.741	44.27	317290.705	228975.359
TP33	717251.879	729014.955	44.29	317326.609	228987.576
TP34	717290.009	729024.903	44.02	317364.747	228997.526
TP35	717329.846	729039.443	43.64	317404.593	229012.07
TP36	717307.779	729278.564	41.83	317382.519	229251.242
Soakaway Tests					
SA01	716955.538	729264.316	40.94	317030.202	229236.989
SA02	717269.769	729264.111	43.74	317344.501	229236.786
SA03	717183.254	729165.050	44.35	317257.968	229137.703
SA04	717165.320	728959.599	44.76	317240.032	228932.207
Foundation Pits					
FI01	716910.225	729174.568	43.93	316984.880	229147.221
FI03	717262.068	729304.529	42.86	317336.798	229277.213
FI04	717351.212	729223.666	40.78	317425.961	229196.333
FI05	717356.448	729080.664	43.13	317431.200	229053.300
FI06	717192.237	728958.320	44.56	317266.955	228930.928
FI07	717092.842	728976.654	44.97	317167.538	228949.265
FI08	717065.834	729097.195	45.25	317140.523	229069.832
Slit Trenches					
ST01 Start	717223.751	729038.943	44.03	317298.475	229011.569
ST01 End	717233.063	729044.609	43.89	317307.789	229017.236
ST02 Start	717249.249	729028.909	44.06	317323.978	229001.533
ST02 End	717256.341	729035.083	44.14	317331.072	229007.708
ST03 Start	717270.538	729000.305	44.46	317345.272	228972.923
ST03 End	717279.130	729007.121	43.24	317353.866	228979.740
California Bearing Ratio Tests					
CBR01	717262.758	729221.112	43.02	317337.489	229193.778
CBR02	717238.412	729197.823	42.78	317313.138	229170.483

Survey Data

Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
CBR03	716964.625	729260.612	41.53	317039.291	229233.284
CBR04	717088.711	729150.830	45.03	317163.405	229123.479
CBR05	717095.856	729046.323	45.14	317170.552	229018.950
CBR06	717292.107	729077.311	43.52	317366.845	229049.946

Legend Key

- Locations By Type - CP
- Locations By Type - DP
- Locations By Type - ICBR
- Locations By Type - IP
- Locations By Type - OP
- Locations By Type - TP



Contract No:	5811
Contract Name:	Dundrum Central Development
Location:	Dundrum, Dublin 14
Client:	Land Development Agency
Engineer:	Barrett Mahony
Title:	Site Plan
Scale:	1:2250
Drawn By:	SL

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GEOPHYSICAL SURVEY

REPORT

Central Mental Hospital,

Churchtown Lower, Dundrum,

County Dublin

Date:
12/04/2021

Licence: 21R0015

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GEOPHYSICAL SURVEY SUMMARY SHEET
CHURCHTOWN LOWER, DUNDRUM, COUNTY DUBLIN

Site Name	Central Mental Hospital	**Ref No.**	21001
Townland	Churchtown Lower	**Licence No.**	21-R-0015
County	Dublin	**Licence Holder**	Joanna Leigh
ITM (centre)	E717205, N729028	**Purpose**	Pre-planning
Client	IAC Ltd.	**Reference No.**	N/A

Ground Conditions	Survey was conducted in six predefined areas within the grounds of the Central Mental Hospital. Ground conditions were very good and comprised short grass.
Survey Type	Detailed gradiometer survey totalling c. 4.5 hectares.

Summary of Results

The geophysical survey has successfully identified traces of a possible rectilinear enclosure, also identified in satellite imagery. The rectilinear response measures c.12m x 9m. No internal responses were recorded.

Broad responses within a clearly defined area are indicative of rubble material. Although this may be modern in origin, it is possible that a former building or structure is represented here.

The remains of two former field boundaries have been recorded within the dataset which correlate with those depicted on OS 6inch mapping. A possible additional field division is also evident. Series of parallel trends are indicative of historic ploughing activity and/or drainage features.

Field Staff	Joanna Leigh & Susan Curran		
Report Date	12/04/2021	**Report Authors**	Joanna Leigh & Susan Curran

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2. Survey ground conditions and further information 2

3. Survey Methodology 3

4. Data Display 3

5. Survey Results 4

6. Conclusion 6

7. Technical Information 8

Geophysical Survey Report
Churchtown Lower, Dundrum, County Dublin

1 Introduction

1.1 A geophysical survey has been conducted by J. M. Leigh Surveys Ltd. at a site at the Central Mental Hospital campus in the townland of Churchtown Lower, Dundrum, County Dublin. The survey was requested by IAC Ltd. and forms part of a wider pre-planning archaeological investigation.

1.2 The geophysical survey was conducted in all available green spaces within the campus of the hospital. In total, six areas (Areas A-F) were subject to a detailed gradiometer survey.

1.3 Area A lies to the west of the main buildings, adjacent to the entrance, Areas B and C lie to the south, and Areas D, E and F are located to the east. Figure 1 presents the site and survey location at a scale of 1:3,000.

1.4 There are no recorded monuments within the application area. The closest recorded monuments lie c. 560m to the south-west. These comprise of an 'Ecclesiastical enclosure' (DU022-016001), a 'Church' (DU022-016002), and a 'Graveyard' (DU022-016003) with two recorded 'Graveslabs' (DU022-016004 & DU022-016005).

1.5 An archaeological assessment by IAC Ltd. (Corbett, 2020) identified potential archaeological features in the northwest of the site. These were identified through a series of satellite images from 2016 and 2018. The images suggest the location of a large circular enclosure feature with a diameter of 25m, and up to seven further circular features that vary in diameter from 5-20. A sub-rectangular feature is depicted to the northeast of the larger possible enclosure. It is possible that all the features are archaeological in origin, although the smaller features may have been caused by fungus within the grass (Corbett, 2020).

1.6 The main aim of the survey was to investigate the potential archaeological features which were identified through satellite imagery and to identify any further responses which may represent previously unknown archaeological remains within the application area.

1.7 The detailed gradiometer survey was conducted under licence 21R0015 issued by the Department of Housing, Local Government and Heritage.

2 Survey ground conditions and further information

2.1 Geophysical survey was conducted in the available and suitable green spaces within the grounds of the Central Mental Hospital. Detailed gradiometer survey was undertaken in six areas (Areas A -F) and is presented in Figure 1 at a scale of 1:3,000.

2.2 Detailed survey Area A is located northwest in the area identified as of potential interest in the desk based archaeological study (Corbet 2020). Area A lies immediately inside the main entrance to the site. It is surrounded by the high perimeter wall on its western and southern sides and by substantial metal fencing in the northern corner. The area comprised short grass with some mature trees along the north-eastern extent. Manhole covers and services run along the eastern extent of the survey area.

2.3 Areas B is situated to the south of the site. It is bounded by the high perimeter wall along the west and south. Gravel and tarmac sports grounds lie immediately to the north. The western half of Area B comprised of a playing pitch with goalposts and metal benches. These have resulted in localised magnetic disturbance.

2.4 Area C lies immediately east of Area B, separated by metal fencing. The area is bounded by the high perimeter wall along its southern and eastern extents. Area C comprised of short grass.

2.5 Area D is located to the north of Area B. An orchard lies to the south and mature trees and flower beds were positioned around the perimeter.

2.6 Area E is located immediately north of Area C, separated by a small stream and tree-lined boundary. A temporary car park is located to the north of Area E.

2.7 Area F is situated in the north-eastern corner of the hospital grounds, immediately east of the main buildings. This area comprised short grass with outbuildings to the north. The south of Area F was inaccessible at the time of survey, containing long grass and several donkeys.

3 Survey Methodology

3.1 A detailed gradiometer survey detects subtle variations in the local magnetic field and measurements are recorded in nano-Tesla (nT). Some archaeological features such as ditches, large pits and fired features have an enhanced magnetic signal and can be detected through recorded survey.

3.2 Data was collected with a Bartington Grad 601-2 instrument. This is a specifically designed gradiometer for use in archaeological prospection. The gradiometer operates with a dual sensor capacity making survey fast and effective.

3.3 The instrument is calibrated in the field to ensure a constant high quality of data. Extremely sensitive, these instruments can detect variations in soil magnetism to 0.01nT, affording diverse application throughout a variety of archaeological, soil morphological and geological conditions.

3.4 All data was collected in 'zigzag' traverses. Grid orientation was positioned to best facilitate site work and ground conditions.

3.5 Data was collected with a sample interval of 0.25m and a traverse interval of 1m, providing 6400 readings per 40m x 40m grid. The survey grid was set out using a GPS VRS unit. Survey tie-in information is available upon request.

3.6 The survey methodology, data presentation and report content adheres to the European Archaeological Council (EAC) (2016) 'Guidelines for the use of Geophysics in Archaeology'.

4 Data display

4.1 A summary greyscale image and accompanying interpretation diagram are presented in Figures 2 and 3, at a scale of 1:1,500.

4.2 Numbers in parenthesis in the text refer to specific responses highlighted in the interpretation diagram (Figure 3).

4.3 Isolated ferrous responses highlighted in the interpretation diagram most likely represent modern ferrous litter and debris and are not of archaeological interest. These are not discussed in the text unless considered relevant.

4.4 The raw gradiometer data is presented in archive format in Appendix A1.01 and A1.02. The raw data is displayed as a greyscale image and xy-trace plot, both at a scale of 1:500. The archive plots are used to aid interpretation of the results and are used for reference only. They are available as PDF images upon request.

4.5 The display formats referred to above and the interpretation categories are discussed in the summary technical information section at the end of this report.

5 Survey Results

Area A

5.1 The perimeter of Area A is largely dominated by modern magnetic disturbance which may obscure more subtle archaeological responses. This is prominent in the south, which results from the adjacent flats, and along the eastern extent of survey where services are located.

5.2 Although the data is dominated by modern magnetic disturbance, a response (1) and trend are evident and form a rectilinear pattern measuring c.12m north to south and c.9m east to west. This corresponds with the location of a rectilinear cropmark which was identified on a 2016 Google satellite image (Corbett, 2020). This response may represent a rectilinear enclosure and is of potential archaeological interest.

5.3 Another response (2) measuring c.5m diameter forms a vague curvilinear pattern in the south of Area A. This response is less well-defined and may represent more recent activity. However, an archaeological interpretation must also be considered. It is possible that the remains of a small sub-circular ditched feature are represented here.

5.4 A series of parallel linear trends are evident in the western half of Area A. They are oriented approximately north/south and are indicative of agricultural activity, most likely historic ploughing activity. Some of the trends (3) are more prominent and may represent boundary divisions or drainage features.

Area B

5.5 Area B is also largely dominated by modern magnetic disturbance, particularly to the north where it is bordered by a gravelled sports area. The eastern half of Area B comprises of a sports playing field. Goal posts and benches have resulted in broad magnetic disturbance.

5.6 Within the playing pitch area, ground disturbance and landscaping activity have resulted in patches of heightened background responses (4). Within this, two faint linear trends (5) form a vague rectilinear pattern. It is speculated that these represent further modern ground disturbance and are not of archaeological interest. No clear archaeological pattern is evident.

5.7 Two linear responses (6) are evident at the northern and eastern extent of the playing pitch. These are consistent with the location of a former field boundary as depicted on the OS 6inch mapping. This also appears as a path or trackway on the OS 25inch mapping.

5.8 A negative linear response (7) runs approximately north/south to the east of (6). This may represent the remains of a former embanked or walled field boundary, although this is speculative.

5.9 A faint curvilinear trend (8) has been identified in the eastern half of the dataset, close to the boundary. This is poorly defined but may represent the remains of a former ditched feature. An archaeological interpretation is cautious, as it may equally represent more recent groundworks. No clear archaeological pattern is evident.

Area C

5.10 Area C is dominated by ferrous disturbance and areas of increased magnetic response which are likely to be modern in origin. These are not considered to be of archaeological potential.

5.11 A linear response (9) along the northern boundary of Area C is similar to (6) in Area B. This response may represent a continuation of the former boundary feature.

Area D

5.12 A linear response (10) runs approximately east/west across the northern half of Area D. This is consistent with the location of a former field boundary depicted on both the OS 6inch and 25inch maps. It currently runs adjacent and parallel to a hedgerow.

5.13 In the south of Area D, a modern services pipe is evident as a linear ferrous response.

5.14 Adjacent to the modern pipe, a short linear response (11) is evident. The magnetic signature of this response is suggestive of a ditched feature; however, it does not form a coherent pattern and an archaeological interpretation is unclear.

Area E

5.15 Area E comprises of modern disturbance and ferrous responses. No responses of interest were recorded.

Area F

5.16 The western half of Area F is dominated by numerous broad responses with large magnetic signatures, all located within a well-defined area of increased magnetic response (12). Although the responses may represent a spread of modern material,

it is possible that a spread of rubble or structural material is represented here. It is speculated that the responses represent the remains of a former structure or building.

6 Conclusion

6.1 The Central Mental Hospital was established in 1850 and the grounds have undergone extensive landscaping in the intervening decades. Moreover, the requirement for modern services within the grounds to service the various buildings has also led to considerable ground disturbance. This has resulted in pockets of magnetic disturbance throughout the site, particularly around the perimeter, which may obscure more subtle archaeological responses.

6.2 The survey has identified traces of the possible rectilinear feature (1) which was noted on 2016 satellite imagery (Corbett, 2020). Although it is possible that this represents more recent landscaping activity, the response is indicative of a ditched feature and may be of archaeological interest.

6.3 The survey was inconclusive in relation to the large circular cropmark identified on the 2016 satellite imagery (Corbett, 2020). However, a small curvilinear response (2) does lie within this general area, albeit much smaller in scale. An archaeological interpretation of the response is unclear.

6.4 Plough trends and possible drainage features in Area A are indicative of former agricultural activity.

6.5 Areas B and D revealed two former field boundaries (6 & 9) which correspond with the location of field boundaries on OS 6inch mapping. A possible third boundary (7) has also been identified in Area B.

6.6 A possible ditched feature (Area D) and several poorly defined trends have been identified in the data. They do not form coherent patterns and may be the result of natural variations in the subsoil. An archaeological interpretation is cautious.

6.7 In Area F, broad responses within a well-defined area are of potential interest. Although these may represent modern disturbance, the responses are typical of rubble or structural material. It is speculated the remains of a former structure may be represented here.

6.8 Consultation with a licensed archaeologist and with the Department of Housing, Local Government and Heritage is recommended to establish if any additional archaeological works are required.

7 Technical Information Section

Instrumentation & Methodology

Detailed Gradiometer Survey



Detailed gradiometer survey can either be targeted across a specific area of interest or conducted as a blanket survey across an entire application area, often as a standalone methodology.

Sampling methodologies can vary but a typical survey is conducted with a sample interval of 0.25m and a traverse interval of 1m. This allows detection of potential archaeological responses. Data is often collected in grids measuring 40m x 40m, with the data displayed accordingly. A more detailed survey methodology may be applied where archaeological remains are thought likely. This can sometimes produce results with a more detailed resolution. A survey with a grid size of 20m x 20m and a traverse interval of 0.5m will provide a data set with high resolution.

Bartington GRAD 601-2

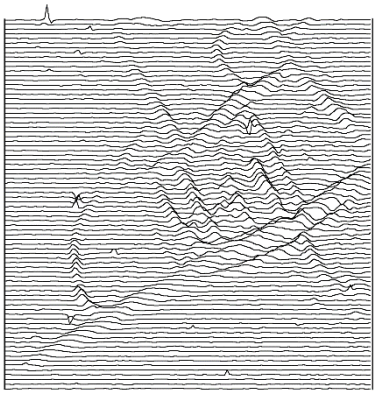


The Bartington Grad 601-2 instrument is a specifically designed gradiometer for use in archaeological prospection. The gradiometer operates with a dual sensor capacity making survey very fast and effective. The sensors have a separation of 1m allowing greater sensitivity.

Frequent realignment of the instruments and zero drift correction ensure a constant high quality of data. Extremely sensitive, these instruments can detect variations in soil magnetism to 0.1nT, affording diverse application throughout a variety of archaeological, soil morphological and geological conditions.

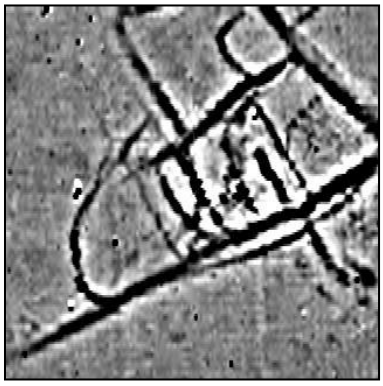
Gradiometer Data Display & Presentation

XY Trace



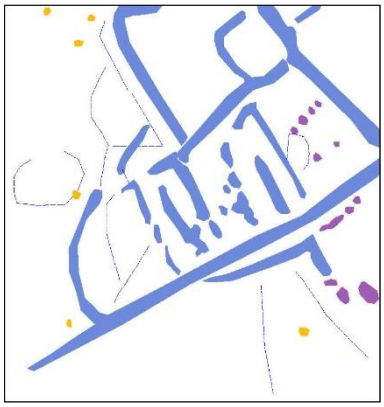
The data are presented as a series of linear traces, enabling a semi-profile display of the respective anomalies along the X and Y-axes. This display option is essential for distinguishing between modern ferrous materials (buried metal debris) and potential archaeological responses. The XY trace plot provides a linear display of the magnitude of the response within a given data set.

*Greyscale**



As with dot density plots, the greyscale format assigns a cell to each datum according to its location on the grid. The display of each data point is conducted at very fine increments, allowing the full range of values to be displayed within the given data set. This display method also enables the identification of discrete responses that may be at the limits of instrument detection. In the summary diagrams processed, interpolated data is presented. Raw un-interpolated data is presented in the archive drawings along with the xy-trace plots.

Interpretation



An interpretation of the data is made using many of the plots presented in the final report, in addition to examination of the raw and processed data. The project managers' knowledge and experience allows a detailed interpretation of the survey results with respect to archaeological potential.

**XY Trace and raw greyscale plots are presented in archive form for display of the raw survey data. Summary greyscale images of the interpolated data are included for presentation purposes and to assist interpretation. The archive plots are provided as PDF images upon request.*

Glossary of Interpretation Terms

Categories of responses may vary for different data sets. The list below are the most commonly used categories for describing geophysical responses, as presented in the summary interpretation diagrams.

Archaeology

This category refers to responses which are interpreted as of clear archaeological potential and are supported by further archaeological evidence such as aerial photography or excavation. The term is generally associated with significant concentrations of former settlement, such as ditched enclosures, pits and associated features.

?Archaeology

This term corresponds to anomalies that display typical archaeological patterns where no record of comparative archaeological evidence is available. In some cases, it may prove difficult to distinguish between these and evidence of more recent activity also visible in the data.

Area of Increased Magnetic Response

These responses often lack any distinctive archaeological form, and it is therefore difficult to assign any specific interpretation. The resulting responses are site specific, possibly associated with concentrations of archaeological debris or more recent disturbance to underlying archaeological features.

Trend

This category refers to low-level magnetic responses barely visible above the magnetic background of the soil. Interpretation is tentative, as these anomalies are often at the limits of instrument detection.

Ploughing/Ridge & Furrow

Visible as a series of linear responses, these anomalies equate with recent or archaeological cultivation activity.

?Natural

A broad response resulting from localised natural variations in the magnetic background of the subsoil; presenting as broad amorphous responses most likely resulting from geological features.

Ferrous Response

These anomalies exhibit a typically strong magnetic response, often referred to as ‘iron spikes,’ and are the result of modern metal debris located within the topsoil.

Area of Magnetic Disturbance

This term refers to large-scale magnetic interference from existing services or structures. The extent of this interference may in some cases obscure anomalies of potential archaeological interest.

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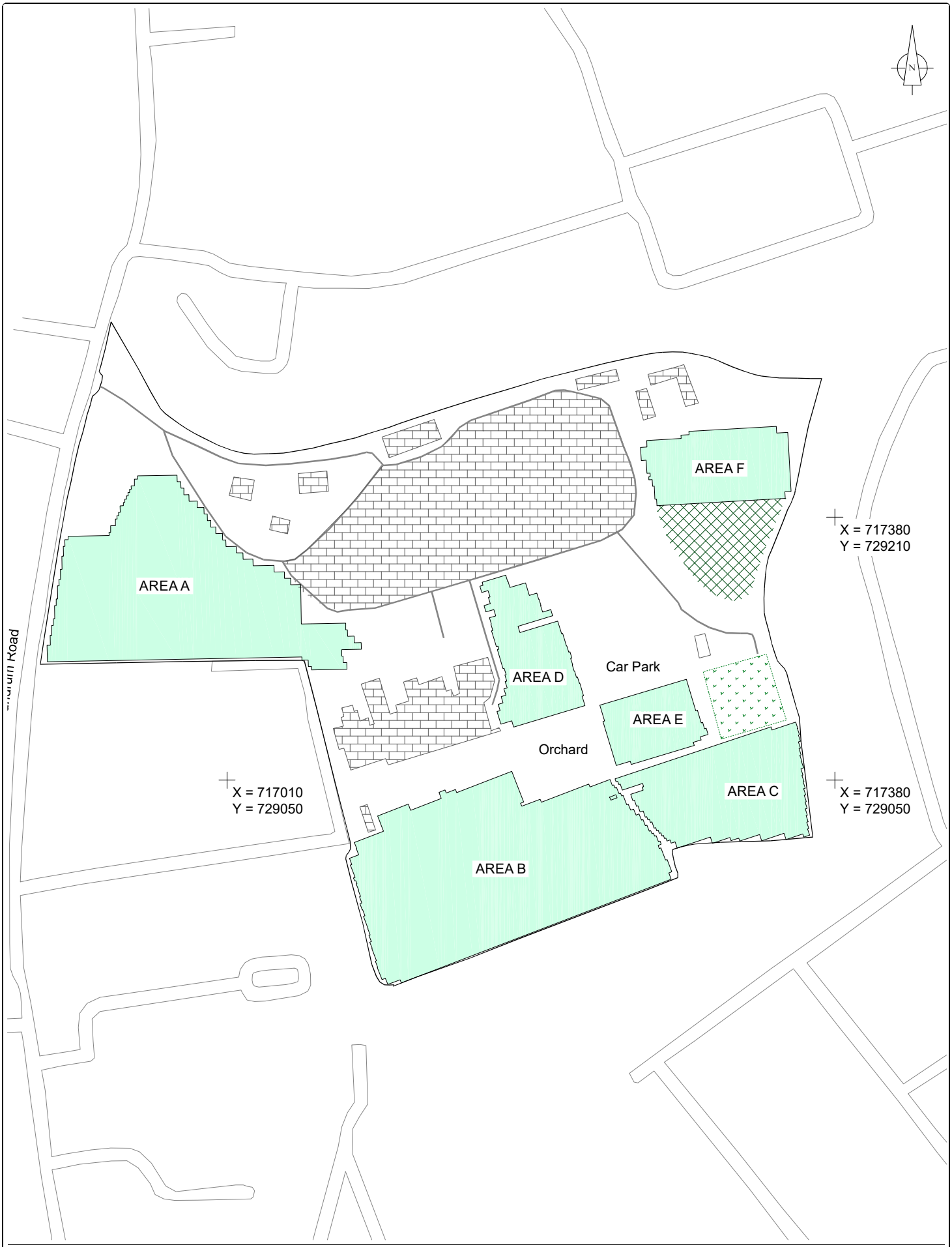
National Soil Survey of Ireland (1980) *General soil map second edition (1:575,000)*. An Foras Taluntais.

List of Figures

Figure	Description	Paper Size	Scale
Figure 1	Site & survey location diagram	A4	1:3,000
Figure 2	Summary greyscale image	A3	1:1,500
Figure 3	Summary interpretation diagram	A3	1:1,500

Archive Data Supplied as a PDF Upon Request

A1.01	Raw data greyscale image	A0	1:500
A1.02	XY-Trace plot	A0	1:500



Gradiometer survey | Buildings | Walled Garden | Donkey Paddock

0 metres 120

Client: IAC Ltd.	Project: Geophysical Survey Churchtown Lower, Dundrum, County Dublin	Title: Site & Survey Location	J.M. Leigh Surveys Ltd. www.jmlsurveys.com

Scale @ A4: 1:3,000
Figure: 1
Licence No.: 21R0015
Issue Date: 12.04.21



0 metres 60

Client: IAC Ltd.

Project: Geophysical Survey
Churchtown Lower,
Dundrum, County Dublin

Title: Summary Greyscale Image

J.M. Leigh Surveys Ltd.
www.jmlsurveys.com

Scale @ A3:	1:1,500
Figure:	2
Licence No.:	21R0015
Issue Date:	12.04.2021

AREA A

AREA B

AREA C

AREA D

AREA E

AREA F

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X = 717380
Y = 729210

X = 717010
Y = 729050

X = 717380
Y = 729050

?Archaeology

Negative response

Trend

?Rubble / structural

Ploughing

Increased background response - ?Modern

Modern services

Modern ferrous

Modern disturbance

0 metres 60

N

Client: IAC Ltd.

Project: Geophysical Survey Churchtown Lower, Dundrum, County Dublin

Title: Summary Interpretation

J.M. Leigh Surveys Ltd.
www.jmlsurveys.com

Scale @ A3:	1:1,500
Figure:	3
Licence No.:	21R0015
Issue Date:	12.04.2021

IAC Archaeology

ARCHAEOLOGICAL ASSESSMENT AT CENTRAL MENTAL HOSPITAL, DUNDRUM ROAD, DUBLIN

LICENCE: 21E0610

ON BEHALF OF: LAND DEVELOPMENT AGENCY

I.T.M.: 717168, 729141

LICENCEE: MARC PIERA
AUTHOR: MARC PIERA

REPORT STATUS: FINAL
FEBRUARY 2022

IAC PROJECT REF.: J3676

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DOCUMENT CONTROL SHEET

DATE	DOCUMENT TITLE	REV.	PREPARED BY	REVIEWED BY	APPROVED BY
05.12.21	Archaeological Assessment at Central Mental Hospital, Dundrum Road, Dundrum, Dublin	0	Marc Piera	Tim Coughlan	Tim Coughlan

ABSTRACT

IAC Archaeology has prepared this report on behalf of Land Development Agency, to study the impact, if any, on the archaeological and historical resource of proposed development, which is located at Central Mental Hospital, Dundrum Road, Dublin (ITM 717168, 729141). The report was undertaken by Marc Piera of IAC Archaeology under licence 21E0610. An earlier pre-planning Archaeological Impact Assessment was caried out by IAC Archaeology in September 2020. A geophysical survey has been carried out by Joanna Leigh in April 2021 (21R0015).

Archaeological testing was carried out over the course of five days from 26th of October 2021 using a mechanical excavator fitted with a flat grading bucket. The trenches targeted geophysical anomalies and open green space to fully investigate the archaeological potential of the site. A total of 21 trenches (T1-5 and T23-38) were excavated. A further 17 trenches (T6-22) originally proposed for excavation were located in areas of current use for the Central Mental Hospital patients and were not excavated, however these were in areas that previous geophysics had indicated had no archaeological significance.

Testing revealed 5 areas of archaeological significance, which have been designated as Archaeological Areas AA1-AA5. These comprise two small enclosures dating to the post-medieval era (AA1-2), a kiln (AA3), an isolated pit (AA4) and a cluster of hearths with postholes (AA5).

It is recommended that the area of impact in AA1-AA5 should be preserved by record through full archaeological excavation. It is recommended that all ground disturbances associated with the proposed development be monitored by a suitably qualified archaeologist. If any features of archaeological potential are discovered during the course of the works further archaeological mitigation may be required, such as preservation in-situ or by record. Any further mitigation will require approval from the National Monuments Service of the DoHLGH.

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1 INTRODUCTION

1.1 GENERAL

The following report details the results of a programme of archaeological testing undertaken at Central Mental Hospital, Dundrum Road, Co. Dublin, prior to proposed development. This assessment has been carried out to ascertain the potential impact of the proposed development on the archaeological resource that may exist within the proposed development area. The assessment was undertaken by Marc Piera of IAC Archaeology (IAC), on behalf of Land Development Agency and under Licence 21E0610, as issued by the National Monuments Service of the Department of Housing, Local Government and Heritage (DoHLGH)

Test trenching commenced at the site on 26th of October 2021 and continued for five days. This was carried out using a 13 tonne 360 degree tracked excavator, with a flat, toothless bucket, under strict archaeological supervision. A total of 21 trenches (T1-5 and T23-38) were excavated, measuring 973 linear metres in total. A further 17 trenches (T6-22) originally proposed for excavation were located in areas of current use for the Central Mental Hospital patients and were not excavated, however these were in areas that previous geophysics had indicated had no archaeological significance. This report follows on from an earlier pre-planning Archaeological Impact Assessment was caried out by IAC Archaeology in September 2020. A geophysical survey has been carried out by Joanna Leigh in April 2021 (21R0015).

Testing revealed 5 areas of archaeological significance, which have been designated as Archaeological Areas AA1-AA5. These comprise two small enclosures dating to the post-medieval times (AA1-2), a kiln (AA3), an isolated pit (AA4) and a cluster of hearths with postholes (AA5).

1.2 THE DEVELOPMENT

The proposed development is currently in the design phase and no current design plans are available.

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1 BACKGROUND

The proposed development area is located at the Central Mental Hospital campus, directly east of Dundrum Road, County Dublin. There are no recorded monuments located within the site, with the closest being the site of an ecclesiastical enclosure located c. 540m to the southwest (DU022-016001).

The proposed development area is surrounded by residential development on all sides, with a soccer pitch also located directly to the south. The site itself is occupied by a range of buildings associated with the Hospital at its northern end, with open green spaces at the east, west and south and a small formal garden towards the southeast (Figure 5).

2.2 SUMMARY OF PREVIOUS ARCHAEOLOGICAL FIELDWORK

A review of the Excavations Bulletin (1970–2019) has revealed that while no previous archaeological investigations have been carried out within the site boundary, seven have taken place within the study area.

Archaeological geophysical survey (Bolger and Harrison 2005, Licence Ref. 05R063) two phases of testing (Bolger and Harrison 2005, Licence Ref. 05E0847 and Lohan 2007, Licence Ref. 06E1153) and archaeological excavation (O'Donovan 2007, Licence Ref. 07E0116) at Notre Dame de Missions School, Dundrum c.650m south southwest of the proposed development area revealed remains of a partially truncated ditch dating to the early medieval period and associated with the ecclesiastical enclosure to the east (DU022-016001). The remains of a second ditch were also identified which is thought to date to the 12th-15th centuries (O'Donovan 2007 p.2). Subsequent archaeological monitoring for a renewed planning application in this area in 2017 did not reveal anything of archaeological significance (Bennett 2017:144, Licence Ref. 17E0308).

Nothing of archaeological significance was identified during monitoring on Churchtown Road, c. 540m south of the proposed development area (Bennett 2015:151, Licence Ref. 15E0231) or on Dundrum Main Street, c. 750m south of the site (Sheehan and Halpin 2012, Licence Ref. 12E219).

2.3 CARTOGRAPHIC ANALYSIS

Down Survey Map, Barony of Rathdown, Parish of Donnybrook and Taney, 1655-6

A castle is depicted in Dundrum, with a path leading from there to Milltown bridge to the north. The precise location of the proposed development area is not clear on this map.

John Rocque's Map of the City and County of Dublin, 1756 (Figure 2)

By the time of this map, it appears that the proposed development area is located across agricultural fields to the east of Dundrum Road and the Slang Stream. A paper mill is depicted along the Slang Stream, to the northwest of the site.

First Edition Ordnance Survey Map, 1837, scale 1:10,560 (Figure 2)

This is the first accurate historic mapping coverage of the area containing the proposed development area. The site is located across a number of agricultural fields to the east of Anna Villa and its associated demesne. There are no features of note located within the site boundary.

Ordnance Survey Map, 1872, scale 1:10,560 (Figure 3)

By the time of this map the Central Lunatic Asylum has been constructed at the northern end of the site, with associated formal gardens extending from the building southwards. The east and west sides of the site appear to be open ground.

Ordnance Survey Map, 1907, scale 1:2,500 (Figure 3)

By the time of this map there have been a number of additions to the Central Lunatic Asylum, including a Roman Catholic chapel to the west of the main building, extensions to the main building itself and the addition of a number of out buildings. A mortuary building is labelled at the northwest corner of the site, in the location of a smaller building recorded on the 1872 map. A new tree lined access road has been added which leads from Dundrum Road south eastwards towards the Asylum, while the formal gardens at the southern end of the site appear to have been removed.

2.4 SUMMARY OF GEOPHYSICAL RESULTS

Six Areas (A-D) were investigated during the geophysical survey in April 2021. The geophysical survey identified traces of possible penannular and rectilinear enclosures in Area A, that were previously identified in satellite imagery. The rectilinear response measures c.12m x 9m. No internal responses were recorded. Plough trends and possible drainage features in Area A are indicative of former agricultural activity.

Broad responses within a clearly defined area are indicative of rubble material. Although this may be modern in origin, it is possible that a former building or structure is represented here. The remains of two former field boundaries have been recorded in Areas B and D which correlate with those depicted on OS 6inch mapping. A possible additional field division is also evident in Area B. Also identified was a series of parallel trends are indicative of historic ploughing activity and/or drainage features.

2.5 AERIAL PHOTOGRAPHIC ANALYSIS

Inspection of the aerial photographic coverage of the proposed development area held by the Ordnance Survey (1995-2013), Google Earth (2005-2019), and Bing Maps (2020) revealed that the present structures on site have remained unchanged since at1995. The greenfield areas of the site contain a number of small garden areas, nature trees and larger open green spaces.

Satellite imagery from 2018 shows a circular enclosure feature with a diameter of 25m in the northwest corner of the site. The slightly earlier coverage from 2016 shows the same feature accompanied by at least seven other circular features that vary in diameter from 5-20m. A sub-rectangular feature is also depicted to the northeast.

2.6 TOPOGRAPHICAL FILES

Information on artefact finds from the study area in Dublin has been recorded by the National Museum of Ireland since the late 18th century. Location information relating to these finds is important in establishing prehistoric and historic activity in the study area. A review of the topographical files for the townland of Friarland, Co. Dublin has shown that there were no stray finds identified in the area.

3 ARCHAEOLOGICAL TESTING

3.1 GENERAL

Test trenching took place on 26 October 2021 and continued for five days, using a 13 tonne 360 degree tracked excavator equipped with a flat, toothless bucket under strict archaeological supervision. Any investigated deposits were preserved by record. This was by means of written, drawn and photographic records.

The site located in the Central Mental Hospital campus was divided in six green field areas -A, B, C, D, E and F (Figure 5). Archaeological testing was undertaken in areas C, D, E, F and western half of area A. A total of 21 trenches (T1-5 and T23-38) were excavated across the site measuring 973 linear metres (Figures 5-9, Plates 1-16). The eastern half of area A and area B were green areas in use for the Central Mental Hospital patients and were not investigated, with a total of 17 proposed trenches not excavated (T6-22).

The test trenches were excavated to determine, as far as reasonably possible, the location, extent, date, character, condition, significance and quality of any surviving archaeological remains threatened by the proposed development. Test trenching was also carried out to clarify the nature and extent of existing disturbance and intrusions and to assess the degree of archaeological survival in order to formulate further mitigation strategies. These are designed to reduce or offset the impact of the proposed development scheme.

3.2 TESTING RESULTS

Topsoil was generally a dark brown sandy clay reaching usually 0.4-0.5m in depth, but some varieties of depths were also recorded in individual trenches (see appendix 1).

The subsoil was broadly consistent across the site and generally consisting of a light brown silty clay with moderate small stone into. At the area A the subsoil was slightly sandy and with much gravel and cobble inclusion and occasional small boulders.

Detailed trench results are presented in Appendix 1 and relevant contexts in Appendix 2.

Archaeological Features

A total of 5 archaeological areas (AA1-AA5) were identified across the site. AA1-AA2 are located in the northwest (Area A) while AA3 is located in the centre (Area E) and AA4-AA5 in the northeast (Area F).

AA1

Two shallow linear features (C3 and C5) were identified in Trench 2. Small sherds of brown glazed pottery and red fabric pottery were observed from the fills, suggesting a post-medieval date. They identified features broadly correspond to the location of a curvilinear geophysical anomaly which was targeted in Trench 2. The plan of the geophysical anomaly indicates a penannular feature circa 4.5-5m in diameter. It is

interpreted that may represent the a small post-medieval penannular enclosure of unknown function.

AA2

Two linear features (C7 and C9) were identified in Trench 4. Sherds of pottery were observed within the fills of the features suggesting a post-medieval date. Staffordshire slipware sherds (late 17th or early 18th Century in date) were identified in linear feature C9 and a tin glazed earthenware sherd pottery (18th Century) was identified in linear feature C7. The features broadly correspond to the location of the rectangular geophysical anomaly which was targeted in Trench 4. The plan of the geophysical anomaly shows a rectangular structure of 12m long by 9m wide. It may represent a post-medieval rectangular enclosure/building footing.

AA3

An isolated kiln (C11) was identified in Trench 29, at the north of the Area E. Remnants of scorched burnt clay was observed on the edges and base of the feature and substantial quantity of charcoal was evident in the fill (C12). It is interpreted as a kiln.

AA4

An isolated pit (C15) was identified in Trench 33, at the south of Area F. It was filled by dark silty clay with shattered orangish red burnt stones and substantial among of charcoal (C16). This fill consisted of material usually associated to *Fulacht fiadh*/Burnt mound site activity. This type of site usually comprises large spreads or low mound of pyrotechnic refuse material with a trough and pits around. While no associated mound was identified during testing there is a possibility of further Burnt Mound/*Fulacht fiadh* remains in the vicinity of the pit.

AA5

A cluster of small possible postholes and an area if *in situ* burning, possibly a hearth, were identified in Trench 34 at southwest of Area F. These features produced evidence of scorched burnt clay and charcoal and may indicate a localised area of burning activity.

Non-Archaeological Features

Test trenches T27, T28 and T28ext targeted a geophysical anomaly in the centre of the site (Area D). The geophysical anomaly shows a linear feature running north-south (Figures 4 and 8). The testing identified a linear feature (C13) running north-south in that location. It was investigated and being interpreted as a drainage or agricultural furrow, with no archaeological significance.

Three ditches C27, C29 and C31 were recorded in area F, at the northeast of site (Figure 9). These ditches were 2m wide and 0.5m in depth, with exception of ditch C27 which reach 1.1 m deep. They were filled by sterile sandy clays with gravel and interpreted as made for agricultural purpose. They may represent relict field boundaries or drainage ditches.

3.3 CONCLUSIONS

A total of 21 trenches were excavated from the 38 originally proposed trenches. The remaining 17 trenches located in areas of current use for the Central Mental Hospital patients and were not excavated, however these were in areas that previous geophysics had indicated had no archaeological significance (Figure 5).

Testing revealed 5 localised areas of archaeological significance, which have been designated as Archaeological Areas AA1-AA5. These comprise two small enclosures dating to the post-medieval period (AA1-2), a kiln (AA3), an isolated pit (AA4) and a cluster of postholes with a small possible hearth (AA5).

4 IMPACT ASSESSMENT AND MITIGATION STRATEGY

Impacts can be identified from detailed information about a project, the nature of the area affected and the range of archaeological resources potentially affected. Archaeological sites can be affected adversely in a number of ways: disturbance by excavation, topsoil stripping; disturbance by vehicles working in unsuitable conditions; and burial of sites, limiting access for future archaeological investigation.

4.1 IMPACT ASSESSMENT

- There will be an adverse impact on the identified archaeological features in AA1-AA5. This will be caused by ground disturbances associated with the proposed development, which will act to truncate or remove the archaeological remains.

- There may be an adverse impact on previously unrecorded archaeological features or deposits that have the potential to survive beneath the current ground level. This will be caused by ground disturbances associated with the proposed development.

4.2 MITIGATION

We recommend the following actions in mitigation of the impacts above.

- It is recommended that the areas of impact in AA1-AA5 should be preserved by record through full archaeological excavation. The work should be carried out under licence to the National Monuments Service of the DoHLGH.

- It is recommended that all ground disturbances associated with the proposed development be monitored by a suitably qualified archaeologist. If any features of archaeological potential are discovered during the course of the works further archaeological mitigation may be required, such as preservation *in-situ* or by record. Any further mitigation will require approval from the National Monuments Service of the DHLGH.

It is the developer's responsibility to ensure full provision is made available for the resolution of any archaeological remains, both on site and during the post excavation process, should that be deemed the appropriate manner in which to proceed.

Please note that all recommendations are subject to approval by the National Monuments Service of the Heritage and Planning Division, Department of Housing, Local Government and Heritage (DoHLGH).

5 REFERENCES

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CARTOGRAPHIC SOURCES

Down Survey Map, Barony of Rathdown, Parish of Donnybrook and Taney, 1655-6

John Rocque's Exact survey of the city and suburbs of Dublin, 1760

Ordnance Survey maps of County Dublin, 1837, 1872, 1911 and 1938

ELECTRONIC SOURCES

www.excavations.ie – Summary of archaeological excavation from 1970□2020.

www.archaeology.ie – DoHLGH website listing all SMR/RMP sites.

www.osiemaps.ie – Ordnance Survey aerial photographs dating to 1995, 2000, and 2005 and 6-inch/25-inch OS maps.

www.heritagemaps.ie – The Heritage Council web-based spatial data viewer which focuses on the built, cultural and natural heritage.

www.googleearth.com – Satellite imagery of the proposed development area.

www.bingmaps.com - Satellite imagery of the proposed development area.

APPENDICES

APPENDIX 1 TEST TRENCH RESULTS

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
1	40	1.8	0.6	West–east	No archaeology found. Topsoil consisting of dark brown sandy clay. The natural subsoil consists of a mid-greyish brown gravel sand with cobbles
2	43	1.8	0.4	West-east	Possible archaeology found. Geophysical curvilinear anomaly was targeted at the west side of the trench. Two linear features C3 and C5 were identified in that specific location. Small fragments of pottery were observed within the fills of the features, suggesting a postmedieval chronology. It is interpreted as a small circular enclosure. Further shallow furrows and drains were observed across the trench. The natural subsoil consists in a mid-reddish brown sandy clay with gravel.
3	40	1.8	0.4	West-east	No archaeology found. Few shallow furrows and drains without archaeological significance were observed across the trench. The natural subsoil consists in a mid-reddish brown sandy clay with gravel.
4	20	1.8	0.35	West-east	Possible archaeology found. Geophysical rectangular anomaly was targeted at the centre of the trench. Two linear features C7 and C9 were identified in that specific location. Few fragments of pottery were observed within the fills of the features, suggesting a postmedieval chronology. It is interpreted as a rectangular enclosure. Further shallow furrows and drains were observed across the trench. The natural subsoil consists in a mid-reddish brown sandy clay with gravel and stones.
5	30	1.8	0.5-1	West-east	No archaeology found. A modern disturbance 1m deep was observed at the west side of the trench filled with rubble material, gravel, stone, red brick and modern pottery. The natural subsoil changes from the mid reddish brown sandy clay to a grey cobble gravel.
23	60	1.8	0.5	West-east	No archaeology found. Shallow furrows were observed across the trench. The natural subsoil consists of yellowish-brown silty clay with small stone.
24	60	1.8	0.5	West-east	No archaeology found. A stony drain and shallow furrows without archaeological significance were observed across the trench. The natural subsoil consists of yellowish-brown silty clay with small stone.
25	80	1.8	0.5	West-east	No archaeology found. A stony drain and shallow furrows without archaeological significance were observed across the trench. The natural subsoil consists of yellowish-brown silty clay with small stone.
26	60	1.8	0.5	West-east	No archaeology found. A stony drain and shallow furrow without archaeological significance were observed across the

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
					trench. The natural subsoil consists of light brown silty clay with small stone.
27	27	1.8	0.5	West-east	No archaeology found. Targeting a geophysical anomaly at the eastern side of the trench. An agricultural drainage/furrow C13 was observed across the eastern side of the trench without archaeological significance. An iron pipe service was identified across the centre of the trench and modern rubble with concrete was observed at the western end of the trench. The natural subsoil consists of light orangish brown silty clay.
28	30	1.8	0.8	West-east	No archaeology found. Targeting a geophysical anomaly at the eastern side of the trench. An agricultural drainage/furrow C13 was observed in that location without archaeological significance. An iron pipe was identified at the centre of the trench and modern rubble with concrete at the western end of the trench. The natural subsoil consists of light yellowish brown silty clay with small stone.
28ext	10	1.8	0.5	West-east	No archaeology found. The trench was targeting the geophysical anomaly and an agricultural drainage/furrow C13 without archaeological significance was observed. The natural subsoil consists of light yellowish silty clay with small stone.
29	40	1.8	0.65	West-east	Archaeology found. An isolated kiln C11 was identified at the centre of the trench. It had scorched orangish red burnt clay and frequent charcoal within. The natural subsoil consists of light yellowish brown silty clay.
30	40	1.8	0.6	West-east	No archaeology found. The natural subsoil consists of light yellowish brown silty clay with stone.
31	40	1.8	0.4	West-east	No archaeology found. Small modern disturbances, possible tree bowls, were observed at the centre of the trench without archaeological significance. The natural subsoil consists of light brown silty clay.
32	18	1.8	1	West-east	No archaeology found. Few shallow furrows without archaeological significance were observed across the trench. The natural subsoil consists of light yellowish brown silty clay.
33	30	1.8	0.7	West-east	Archaeology found. An isolated pit C15 was recorded. Filled with dark brown silty clay with shattered burnt stones and frequent charcoal. It is interpreted as a pit probably related to the *fulacht fiadh* activity. The natural subsoil consists of light yellowish brown silty clay.
34	45	1.8	0.7	West-east	Archaeology found. A cluster of small hearths and postholes- C17-25 were identified at the western side of the trench. The hearths were defined by a scorched orangish red burnt clay with frequent charcoal and surrounded by small postholes. It is interpreted as a fire activity area. The natural consists of light yellowish brown silty clay.
35	50	1.8	0.7	West-east	No archaeology found. Small furrows across the trench and a modern disturbance at the western side of the trench were observed without archaeological significance. The modern disturbance was filled with a dark black sandy clay with frequent coal, red brick, stone and modern pottery, suggesting a possible rubble material or coal refuse deposit. The natural consists of light yellowish brown silty clay.

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
36	70	1.8	0.8	West-east	No archaeology found. A linear feature C27 was identified running NW-SE reaching 1.6m deep and filled by bands of sterile sandy clay and sandy gravel. It may represent an agricultural ditch or natural stream. No archaeological significance was observed. A modern disturbance was identified at centre of the trench filled with black sandy clay with frequent coal and charcoal, suggesting a modern coal refuse deposit. The natural consists of light brown silty clay.
37	70	1.8	0.5	West-east	No archaeology found. A linear feature C29 across the trench at the eastern side. It was 2.2m wide and 0.5m deep, filled by mid brown sandy clay with gravel. Interpreted as an agricultural ditch without archaeological significance. Two modern disturbances about 2m long and reaching 1.3m deep were observed at the eastern side of the trench. Dark sandy clay deposits with frequent coal, charcoal and modern pottery were filing the disturbances, suggesting a modern coal refuse deposit. The natural consists of light brown silty clay.
38	70	1.8	0.7	West-east	No archaeology found. A linear feature C31 across the eastern side of the trench. It was 1.7m wide and 0.5m deep, filled with a mid-brown sandy clay. It is interpreted as agricultural ditch without archaeological significance. Two modern disturbances of 4 and 8m long were identified at the centre of the trench, one filled with black sandy clay with coal and the longer with rubble material as bricks and gravel with mortar. The natural consists of light brown silty clay with stone.

APPENDIX 2 CONTEXTS

CONTEXT NO.	TRENCH NO.	DESCRIPTION
1	T1-38	Topsoil. Mid brown sandy clay.
2	T1-38	Subsoil. Generally light brown silty clay with moderate small stone into along the site and sandy clay with cobble and gravel at area A.
3	T2	Linear feature orientated North-south with sloping sides and concave base. It was 0.45m wide, 0.14m deep and filled by C4. A sherd of pottery was observed suggesting a post-medieval chronology. It is considered as a part of the geophysical curvilinear anomaly. Interpreted as small circular enclosure. Potential archaeology in AA1.
4	T2	Fill of linear feature C3. Consist of a mid-grey sandy clay with animal bone, shell and charcoal inclusions. A tiny unglazed red fabric sherd of pottery was observed suggesting a post-medieval chronology. Potential archaeology in AA1.
5	T2	Linear feature orientated North-south with sloping sides and concave base. It was 0.7m wide, 0.21m deep and filled by C6. A sherd of pottery was observed suggesting a post-medieval chronology. It is considered as a part of the geophysical curvilinear anomaly.

		Interpreted as small circular enclosure. **Potential archaeology in AA1.**
6	T2	Fill of linear feature C5. Soft dark brown silty clay with charcoal and shells inclusions. A tiny brown glazed sherd of pottery was observed suggesting a postmedieval chronology. **Potential archaeology in AA1.**
7	T4	Linear feature orientated North-south with vertical sides and flat base. It was 1.4m wide, 0.25m deep and filled by C8. A sherd of pottery was observed suggesting a post-medieval chronology. It is considered as a part of the rectangular geophysical anomaly. Interpreted as a rectangular enclosure. **Potential archaeology in AA2.**
8	T4	Fill of linear feature C7. Soft mid brown silty clay with charcoal. A tin glazed earthenware sherd of pottery was observed suggesting a post-medieval chronology. **Potential archaeology in AA2.**
9	T4	Linear feature orientated North-south across the trench, with sloping sides and concave base. It was 0.5m wide, 0.1m deep and filled by C10. It is being identified as a part of the rectangular geophysical anomaly. Interpreted as a post-medieval enclosure. **Potential archaeology in AA2.**
10	T4	Fill of linear feature C9. Mid greyish sandy clay and charcoal. A Staffordshire slipware sherd of pottery was observed, suggesting a late 17 or 18 Century chronology. **Potential archaeology in AA2**
11	T29	Cut of kiln. It had an oval shape plan of 1.28m long, 0.8m wide and 0.1m deep. It had gradually sloping sides and flattish base. Scorched orangish red burnt clay was observed *in situ* at the edges. Interpreted as a kiln. **Archaeology in AA3.**
12	T29	Fill of kiln C11. It consists of dark brown silty clay with frequent charcoal and with orangish red burnt clay inclusion. **Archaeology in AA3.**
13	T27-28	Linear feature orientated North-south across trenches 27, 28 and 28 ext. Located at around geophysical anomaly. It was identified along 20m long, 0.6-1.2m wide and 0.12m deep. Filled by C14. Interpreted as an agricultural drainage or furrow. No archaeological significance.
14	T27-28	Fill of linear feature C13. Light greyish brown silty clay with moderate charcoal inclusion. No archaeological significance.
15	T33	Isolated circular pit of 1.3m in diameter, 0.15m depth and filled by C16. Probably associated with *fulacht fiadh* activity as filled shattered burnt stones and charcoal. **Archaeology in AA4.**
16	T33	Fill of pit C15. Dark brown-black silty clay with frequent charcoal and shattered burnt stone inclusion. The type of material relates to a *fulacht fiadh* deposit. **Archaeology in AA4.**
17	T34	Cut of posthole. It was a circular pit of 0.19 m in diameter and 0.07m of depth. It had vertical sides and concave base. Filled by C18. **Archaeology in AA5.**
18	T34	Fill of posthole C17. Dark silty clay with charcoal and burnt clay. **Archaeology in AA5.**
19	T34	Cut of posthole. It was a circular pit of 0.18m in diameter and 0.1m of depth. It had vertical sides and concave base. Filled by C20. **Archaeology in AA5**.

20	T34	Fill of posthole C19. Dark silty clay with charcoal and burnt clay. **Archaeology in AA5.**
21	T34	Cut of hearth. It had a L shape plan orientated West-east with 0.9m long, 0.4m wide and 0.2m deep. Filled by C22. **Archaeology in AA5.**
22	T34	Fill of hearth C21. Dark brown silty clay with frequent charcoal and scorched orangish red burnt clay. **Archaeology in AA5.**
23	T34	Cut of hearth. It had a circular shape of 0.65m in diameter and 0.07m of depth. Filled by C24. **Archaeology in AA5.**
24	T34	Fill of hearth C23. Reddish burnt clay and mid brown silty clay with frequent charcoal. **Archaeology in AA5.**
25	T34	Cut of posthole. It was a circular pit of 0.29m in diameter and 0.06m in depth. It had vertical sides and flat base. Filled by C26. **Archaeology in AA5.**
26	T34	Fill of posthole C25. Mid brown silty clay with occasional charcoal inclusions. **Archaeology in AA5.**
27	T36	Cut of linear feature running NW-SE across the trench. It was 2m wide and 1.6m deep measuring from the topsoil. It had sloping sides and concave base. Filled by C28. Interpreted as agricultural ditch or natural stream. No archaeological significance.
28	T36	Fill of linear feature C27. Bands of sterile brown sandy clay with gravel. No archaeological significance.
29	T37	Cut of linear feature running North-south across trench. It was 2.2m wide and 0.5m deep. It had sloping sides and slightly concave base. Filled by C30. Interpreted as agricultural ditch. No archaeological significance.
30	T37	Fill of linear feature C29. Mid brown sandy clay with gravel and occasional charcoal. No archaeological significance.
31	T38	Cut of linear feature running North-south across trench. It was 1.7m wide and 0.5m deep. It had sloping sides and slightly concave base. Filled by C32. Interpreted as agricultural ditch. No archaeological significance.
32	T38	Fill of linear feature. Mid brown soft sandy clay with occasional shell. No archaeological significance.

APPENDIX 3 RMP SITES WITHIN THE SURROUNDING AREA

SMR NO.	DU022-016001
RMP STATUS	Yes
LOCATION	Churchtown Road Upper
PARISH	Taney
BARONY	Rathdown
I.T.M.	716838, 728402
CLASSIFICATION	Ecclesiastical Enclosure
DIST. FROM DEVELOPMENT	c. 540m southwest
DESCRIPTION	The present St. Nahi's Church of Ireland (1760) at Taney occupies the site of an earlier church (DU022-016002-). A raised graveyard lies S of the present church (DU022-016003-). The ground falls away steeply to the NW and SW. Within the interior of the graveyard there is a distinct fall (D 3m), a berm with a further fall (5m) to the surrounding ground level. The distinct curvature in the SW section of the graveyard boundary may indicate the line of an early ecclesiastical enclosure. An Early Christian grave slab was recently exposed in the graveyard, fragments of which are kept in the present church(DU022-016005-).
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	DU022-016003
RMP STATUS	Yes
LOCATION	Churchtown Road Upper
PARISH	Taney
BARONY	Rathdown
I.T.M.	716849, 728407
CLASSIFICATION	Graveyard
DIST. FROM DEVELOPMENT	c. 540m southwest
DESCRIPTION	A raised graveyard lies S of the present church (DU022-016002-). The ground falls away steeply to the NW and SW. Within the interior of the graveyard there is a distinct fall (D 3m), a berm with a further fall (5m) to the surrounding ground level.
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	DU022-016005
RMP STATUS	Yes
LOCATION	Churchtown Road Upper
PARISH	Taney
BARONY	Rathdown
I.T.M.	716827, 728428

CLASSIFICATION	Grave slab
DIST. FROM DEVELOPMENT	c.570m southwest
DESCRIPTION	Found in 2004 in the SW quadrant of the graveyard (DU022-016003-) (Swords, K. ed. 2009, 100). Comprises a portion of a Rathdown slab (L 0.70m, Wth 0.44m, T 0.15m). Decorated with a flat-bottomed cup-mark enclosed by three concentric circles. Three shallow lines radiate from the outer circle to the end of the slab. At the broken end there is part of an arc of a circle. The slab is located in St. Nahi's church
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	DU022-016004
RMP STATUS	Yes
LOCATION	Churchtown Road Upper
PARISH	Taney
BARONY	Rathdown
I.T.M.	716827, 728428
CLASSIFICATION	Grave slab
DIST. FROM DEVELOPMENT	c.570m southwest
DESCRIPTION	An Early Christian grave slab was recently exposed in the graveyard, fragments of which are kept in the present St Nahi's church (L1.64m, Wth 0.46m, T 011-12m). The slab features an incised Saltire (?) cross formed by two sets of three lines radiating from a central cup mark. The central cup mark is quite faint (D 0.05m) (Corlett 220, 139-143).
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	DU022-016002
RMP STATUS	Yes
LOCATION	Churchtown Road Upper
PARISH	Taney
BARONY	Rathdown
I.T.M.	716818, 728414
CLASSIFICATION	Church
DIST. FROM DEVELOPMENT	c.580m southwest
DESCRIPTION	The present St. Nahi's Church of Ireland church (1760) at Taney occupies the site of an earlier church. Ball notes the association of this early church with St. Ossian and St. Lucan (1900, 191-192).
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	DU022-004006
RMP STATUS	Yes
LOCATION	Churchtown Road Upper
PARISH	Taney

BARONY	Rathdown
I.T.M.	716770, 730232
CLASSIFICATION	Mill – unclassified
DIST. FROM DEVELOPMENT	c. 920m north northwest
DESCRIPTION	A Deed dated 1718 mentions an ancient mill race and watercourse that leads to an iron mill at Milltown (pers comm. Rob Goodbody). Remains of an iron mill survive in the grounds of the last terraced house in Mill Lane at Bankside cottages. The mill pond has been largely back-filled for use as a car park but a portion of the mill pond is still extant. A mill race led to this mill from the Slang river at windy Arbour.
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	DU022-004006
RMP STATUS	Yes
LOCATION	Dundrum Road
PARISH	Taney
BARONY	Rathdown
I.T.M.	
CLASSIFICATION	Mill – unclassified
DIST. FROM DEVELOPMENT	c. 920m north northwest
DESCRIPTION	
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	DU022-004003
RMP STATUS	Yes
LOCATION	Dundrum Road
PARISH	Taney
BARONY	Rathdown
I.T.M.	716730, 730238
CLASSIFICATION	Water Mill – unclassified
DIST. FROM DEVELOPMENT	c. 925m north northwest
DESCRIPTION	In 1724 the owner of the brass mill (DU022-004002-) allowed a paper maker to construct a paper mill alongside his brass mill and to share the water supply at Bankside cottages.
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	DU022-097
RMP STATUS	Yes
LOCATION	Churchtown Road Lower
PARISH	Taney
BARONY	Rathdown

I.T.M.	716322, 730042
CLASSIFICATION	Bridge
DIST. FROM DEVELOPMENT	c. 940m northwest
DESCRIPTION	No information available
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	DU022-004002
RMP STATUS	Yes
LOCATION	Dundrum Road
PARISH	Taney
BARONY	Rathdown
I.T.M.	716733, 730241
CLASSIFICATION	Water Mill – unclassified
DIST. FROM DEVELOPMENT	c. 940m north northwest
DESCRIPTION	A deed of 1724 mentions a brass mill between Mill Lane and the Dodder at Bankside Cottages (pers comm. Rob Goodbody).
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	DU022-004001
RMP STATUS	Yes
LOCATION	Dundrum Road
PARISH	Taney
BARONY	Rathdown
I.T.M.	716730, 730245
CLASSIFICATION	Bridge
DIST. FROM DEVELOPMENT	c. 950m north northwest
DESCRIPTION	The present bridge at Milltown occupies the site of an earlier bridge that spanned the river Dodder. It is shown on the Down Survey (1655-6) map. This earlier was replaced by one of granite in relatively recent past. This bridge spans the River Dodder from the present Milltown Bridge. Both the central pier and its two abutments are founded on rock. Built of rubble masonry, randomly coursed with well-cut ashlar blocks. The arches are round with a cut-water on the S side. Along the parapet is a barrel-vaulted machiolation type step out. The parapets were repaired in the mid-18th century and further repairs undertaken in 1973 (Ball 1903, 2, 110-111; O'Keefe & Simington 1991, 211-214).
REFERENCE	www.archaeology.ie/ SMR file

APPENDIX 4 LEGISLATION PROTECTING THE ARCHAEOLOGICAL RESOURCE

PROTECTION OF CULTURAL HERITAGE

The cultural heritage in Ireland is safeguarded through national and international policy designed to secure the protection of the cultural heritage resource to the fullest possible extent (Department of Housing, Local Government and Heritage 1999, 35). This is undertaken in accordance with the provisions of the *European Convention on the Protection of the Archaeological Heritage* (Valletta Convention), ratified by Ireland in 1997.

THE ARCHAEOLOGICAL RESOURCE

The *National Monuments Act 1930 to 2014* and relevant provisions of the *National Cultural Institutions Act 1997* are the primary means of ensuring the satisfactory protection of archaeological remains, which includes all man-made structures of whatever form or date except buildings habitually used for ecclesiastical purposes. A National Monument is described as 'a monument or the remains of a monument the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic or archaeological interest attaching thereto' (National Monuments Act 1930 Section 2). A number of mechanisms under the National Monuments Act are applied to secure the protection of archaeological monuments. These include the Register of Historic Monuments, the Record of Monuments and Places, and the placing of Preservation Orders and Temporary Preservation Orders on endangered sites.

OWNERSHIP AND GUARDIANSHIP OF NATIONAL MONUMENTS

The Minister may acquire national monuments by agreement or by compulsory order. The state or local authority may assume guardianship of any national monument (other than dwellings). The owners of national monuments (other than dwellings) may also appoint the Minister or the local authority as guardian of that monument if the state or local authority agrees. Once the site is in ownership or guardianship of the state, it may not be interfered with without the written consent of the Minister.

REGISTER OF HISTORIC MONUMENTS

Section 5 of the 1987 Act requires the Minister to establish and maintain a Register of Historic Monuments. Historic monuments and archaeological areas present on the register are afforded statutory protection under the 1987 Act. Any interference with sites recorded on the register is illegal without the permission of the Minister. Two months' notice in writing is required prior to any work being undertaken on or in the vicinity of a registered monument. The register also includes sites under Preservation Orders and Temporary Preservation Orders. All registered monuments are included in the Record of Monuments and Places.

PRESERVATION ORDERS AND TEMPORARY PRESERVATION ORDERS

Sites deemed to be in danger of injury or destruction can be allocated Preservation Orders under the 1930 Act. Preservation Orders make any interference with the site

illegal. Temporary Preservation Orders can be attached under the 1954 Act. These perform the same function as a Preservation Order but have a time limit of six months, after which the situation must be reviewed. Work may only be undertaken on or in the vicinity of sites under Preservation Orders with the written consent, and at the discretion, of the Minister.

RECORD OF MONUMENTS AND PLACES

Section 12(1) of the 1994 Act requires the Minister for Arts, Heritage, Gaeltacht and the Islands (now the Minister for Housing, Local Government and Heritage) to establish and maintain a record of monuments and places where the Minister believes that such monuments exist. The record comprises a list of monuments and relevant places and a map/s showing each monument and relevant place in respect of each county in the state. All sites recorded on the Record of Monuments and Places receive statutory protection under the National Monuments Act 1994. All recorded monuments on the proposed development site are represented on the accompanying maps.

Section 12(3) of the 1994 Act provides that 'where the owner or occupier (other than the Minister for Housing, Local Government and Heritage) of a monument or place included in the Record, or any other person, proposes to carry out, or to cause or permit the carrying out of, any work at or in relation to such a monument or place, he or she shall give notice in writing to the Minister of Housing, Local Government and Heritage to carry out work and shall not, except in case of urgent necessity and with the consent of the Minister, commence the work until two months after giving of notice'.

Under the National Monuments (Amendment) Act 2004, anyone who demolishes or in any way interferes with a recorded site is liable to a fine not exceeding €3,000 or imprisonment for up to 6 months. On summary conviction and on conviction of indictment, a fine not exceeding €10,000 or imprisonment for up to 5 years is the penalty. In addition, they are liable for costs for the repair of the damage caused.

In addition to this, under the *European Communities (Environmental Impact Assessment) Regulations 1989,* Environmental Impact Statements (EIS) are required for various classes and sizes of development project to assess the impact the proposed development will have on the existing environment, which includes the cultural, archaeological and built heritage resources. These document's recommendations are typically incorporated into the conditions under which the proposed development must proceed, and thus offer an additional layer of protection for monuments which have not been listed on the RMP.

THE PLANNING AND DEVELOPMENT ACT 2000

Under planning legislation, each local authority is obliged to draw up a Development Plan setting out their aims and policies with regard to the growth of the area over a five-year period. They cover a range of issues including archaeology and built heritage, setting out their policies and objectives with regard to the protection and enhancement of both. These policies can vary from county to county. The Planning

and Development Act 2000 recognises that proper planning and sustainable development includes the protection of the archaeological heritage. Conditions relating to archaeology may be attached to individual planning permissions.

Dún Laoghaire-Rathdown County Development Plan, 2016-2022

The development plan contains the following policies with regard to the archaeological resource:

AH 1 Protection of Archaeological Heritage – It is Council policy to protect archaeological sites, national Monuments (and their setting), which have been identified in the Record of Monuments and Places (RMP), whilst at the same time reviewing and assessing the feasibility of improving public accessibility to the sites and monuments under the direct ownership or control of the Council or the state.

AH 2 Protection of Archaeological Material in-situ - It is Council policy to seek the preservation in-situ (or as a minimum, preservation by record) of all archaeological monuments included in the Record of Monuments and Places, and of previously unknown sites, features and objects of archaeological interest that become revealed through development activity. In respect of decision making on development proposals affecting sites listed in the Record of Monuments and Places, the Council will have regards to the advice and/or recommendations of the Department of the Environment, Heritage and Local Government (now Department of Arts, Heritage and the Gaeltacht).

AH 3 Protection of Historic Towns – It is Council policy to protect the Historic town of Dalkey as identified by the Department of the Environment, Heritage and Local Government (now Department of Arts, Heritage and the Gaeltacht).

AH 4 Designation of Archaeological Landscapes – It is Council policy to identify, designate and protect Archaeological landscapes in co-operation with relevant government departments.

AH 5 Historic Burial Grounds – It is Council policy to protect historic burial grounds within the County and encourage their maintenance in accordance with good conservation practice.

AH 6 Underwater Archaeology – It is Council policy for all developments, which have the potential to impact on riverine, inter-tidal and sub-tidal environments to require an archaeological assessment prior to works being carried out.

APPENDIX 5 IMPACT ASSESSMENT & THE CULTURAL HERITAGE RESOURCE

POTENTIAL IMPACTS ON ARCHAEOLOGICAL AND HISTORICAL REMAINS

Impacts are defined as 'the degree of change in an environment resulting from a development' (Environmental Protection Agency 2003: 31). They are described as profound, significant or slight impacts on archaeological remains. They may be negative, positive or neutral, direct, indirect or cumulative, temporary or permanent.

Impacts can be identified from detailed information about a project, the nature of the area affected and the range of archaeological and historical resources potentially affected. Development can affect the archaeological and historical resource of a given landscape in a number of ways.

- Permanent and temporary land-take, associated structures, landscape mounding, and their construction may result in damage to or loss of archaeological remains and deposits, or physical loss to the setting of historic monuments and to the physical coherence of the landscape.

- Archaeological sites can be affected adversely in a number of ways: disturbance by excavation, topsoil stripping and the passage of heavy machinery; disturbance by vehicles working in unsuitable conditions; or burial of sites, limiting accessibility for future archaeological investigation.

- Hydrological changes in groundwater or surface water levels can result from construction activities such as de-watering and spoil disposal, or longer-term changes in drainage patterns. These may desiccate archaeological remains and associated deposits.

- Visual impacts on the historic landscape sometimes arise from construction traffic and facilities, built earthworks and structures, landscape mounding and planting, noise, fences and associated works. These features can impinge directly on historic monuments and historic landscape elements as well as their visual amenity value.

- Landscape measures such as tree planting can damage sub-surface archaeological features, due to topsoil stripping and through the root action of trees and shrubs as they grow.

- Ground consolidation by construction activities or the weight of permanent embankments can cause damage to buried archaeological remains, especially in colluviums or peat deposits.

- Disruption due to construction also offers in general the potential for adversely affecting archaeological remains. This can include machinery, site offices, and service trenches.

Although not widely appreciated, positive impacts can accrue from developments. These can include positive resource management policies, improved maintenance and access to archaeological monuments, and the increased level of knowledge of a site or historic landscape as a result of archaeological assessment and fieldwork.

PREDICTED IMPACTS

The severity of a given level of land-take or visual intrusion varies with the type of monument, site or landscape features and its existing environment. Severity of impact can be judged taking the following into account:

- The proportion of the feature affected and how far physical characteristics fundamental to the understanding of the feature would be lost;
- Consideration of the type, date, survival/condition, fragility/vulnerability, rarity, potential and amenity value of the feature affected;
- Assessment of the levels of noise, visual and hydrological impacts, either in general or site-specific terms, as may be provided by other specialists.

APPENDIX 6 MITIGATION MEASURES & THE CULTURAL HERITAGE RESOURCE

POTENTIAL MITIGATION STRATEGIES FOR CULTURAL HERITAGE REMAINS

Mitigation is defined as features of the design or other measures of the proposed development that can be adopted to avoid, prevent, reduce or offset negative effects.

The best opportunities for avoiding damage to archaeological remains or intrusion on their setting and amenity arise when the site options for the development are being considered. Damage to the archaeological resource immediately adjacent to developments may be prevented by the selection of appropriate construction methods. Reducing adverse effects can be achieved by good design, for example by screening historic buildings or upstanding archaeological monuments or by burying archaeological sites undisturbed rather than destroying them. Offsetting adverse effects is probably best illustrated by the full investigation and recording of archaeological sites that cannot be preserved *in situ*.

DEFINITION OF MITIGATION STRATEGIES

ARCHAEOLOGICAL RESOURCE

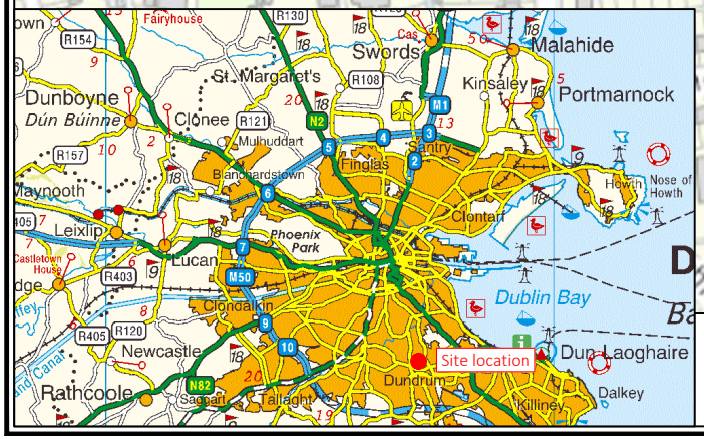
The ideal mitigation for all archaeological sites is preservation *in situ*. This is not always a practical solution, however. Therefore, a series of recommendations are offered to provide ameliorative measures where avoidance and preservation *in situ* are not possible.

Full Archaeological Excavation involves the scientific removal and recording of all archaeological features, deposits and objects to the level of geological strata or the base level of any given development. Full archaeological excavation is recommended where initial investigation has uncovered evidence of archaeologically significant material or structures and where avoidance of the site is not possible. (CIfA 2014b)

Archaeological Test Trenching can be defined as 'a limited programme... of intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site on land or underwater. If such archaeological remains are present test trenching defines their character and extent and relative quality.' (CIfA 2014a)

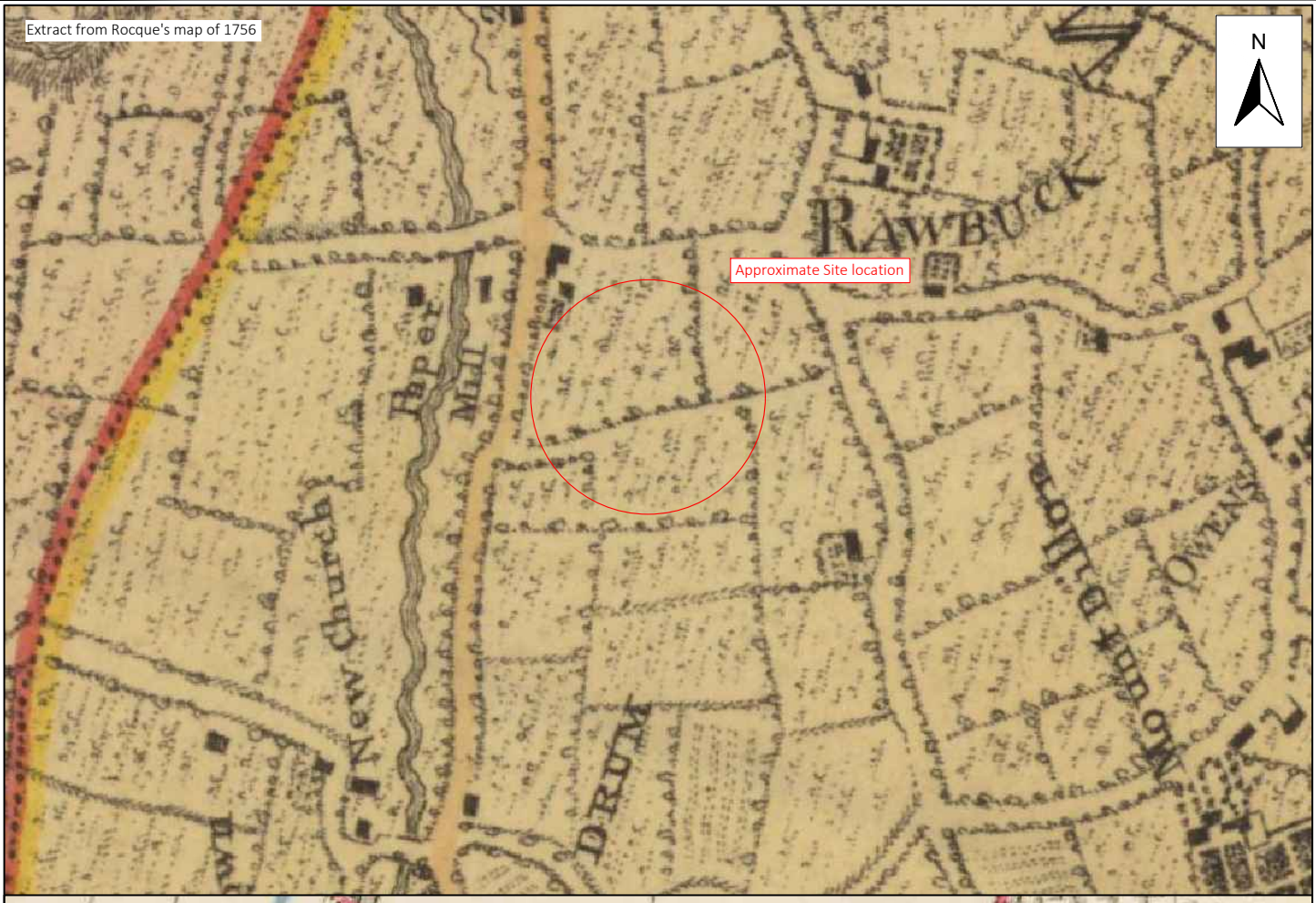
Archaeological Monitoring can be defined as a 'formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons within a specified area or site on land or underwater, where there is possibility that archaeological deposits may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive.' (CIfA 2014c)

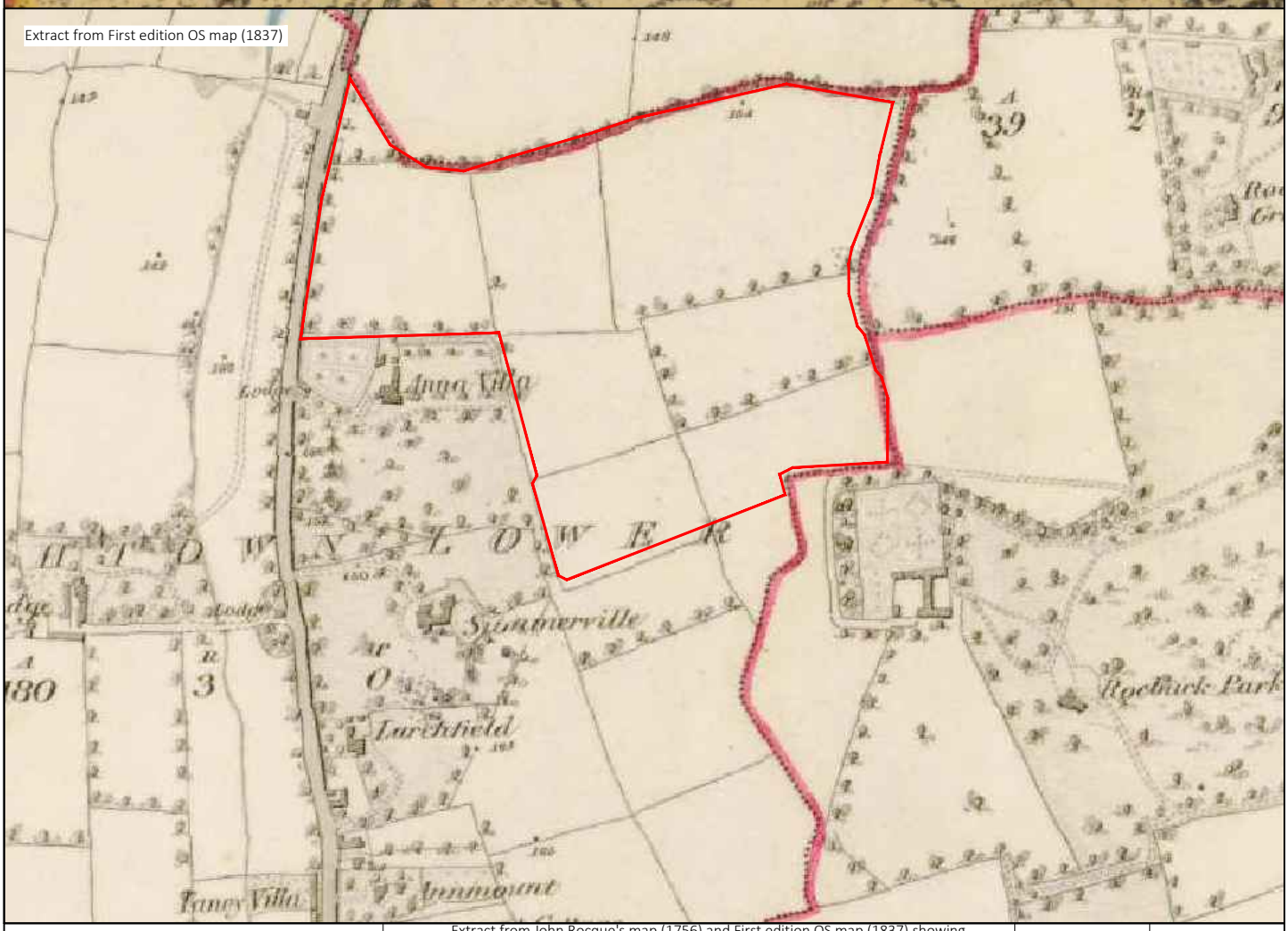




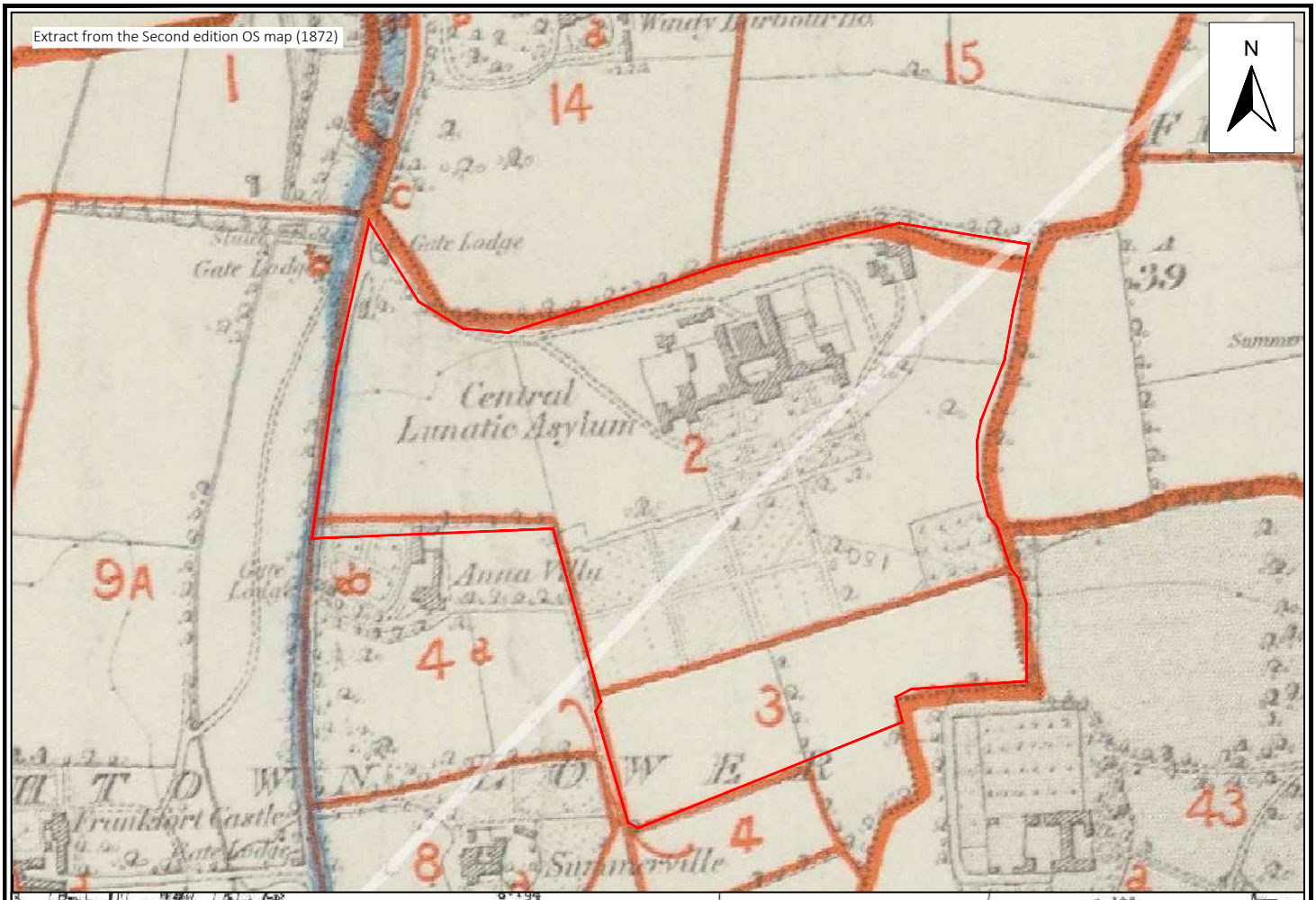
IAC Archaeology

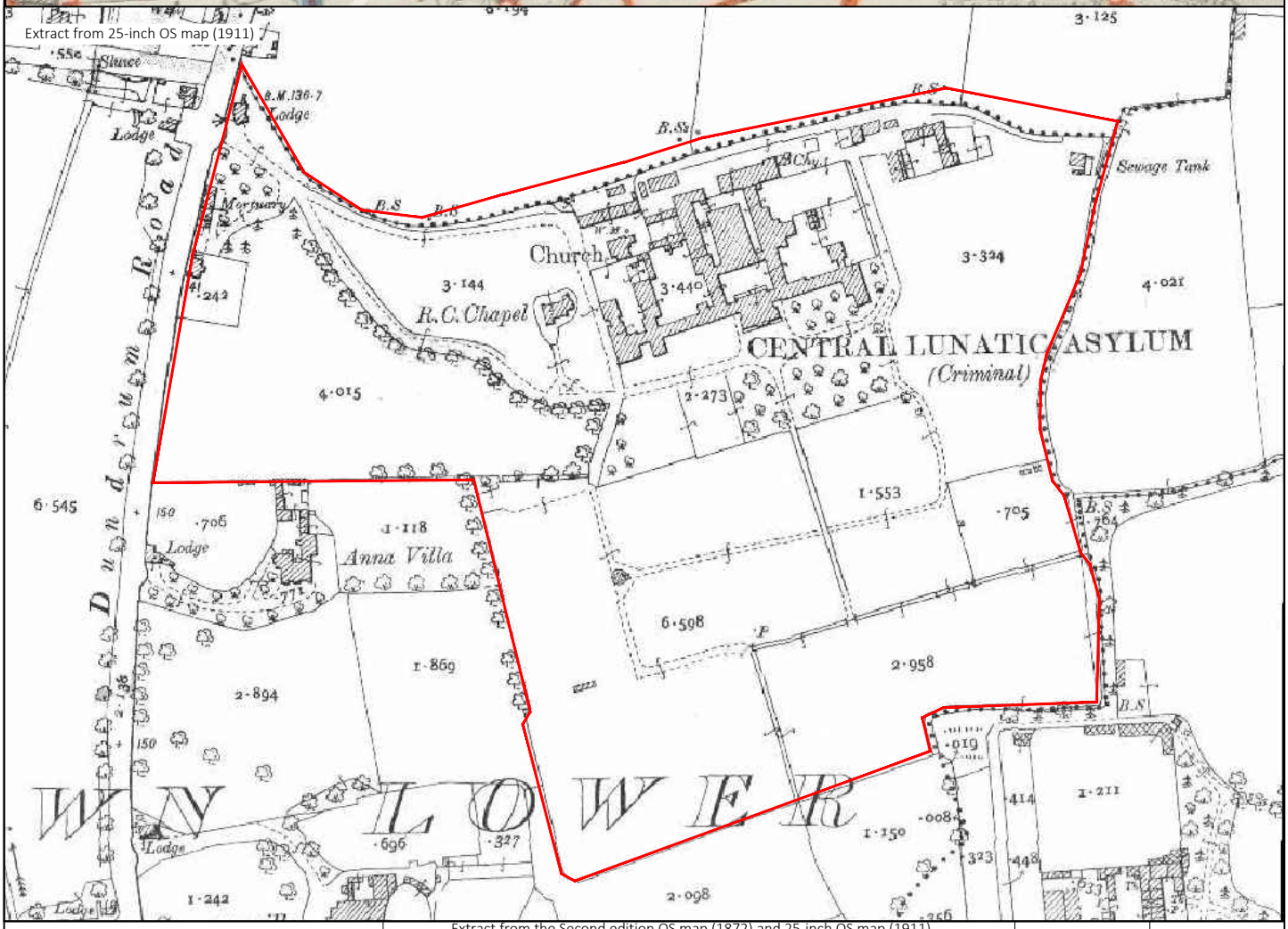
Title	Site location	Scale 1:4000@A4	Drawn by KOM
Project	Central Mental Hospital, Dundrum Road, Dublin 14	Date 04/11/21	Checked by MP
		Job no. J3676	Fig. 1 Rev. -



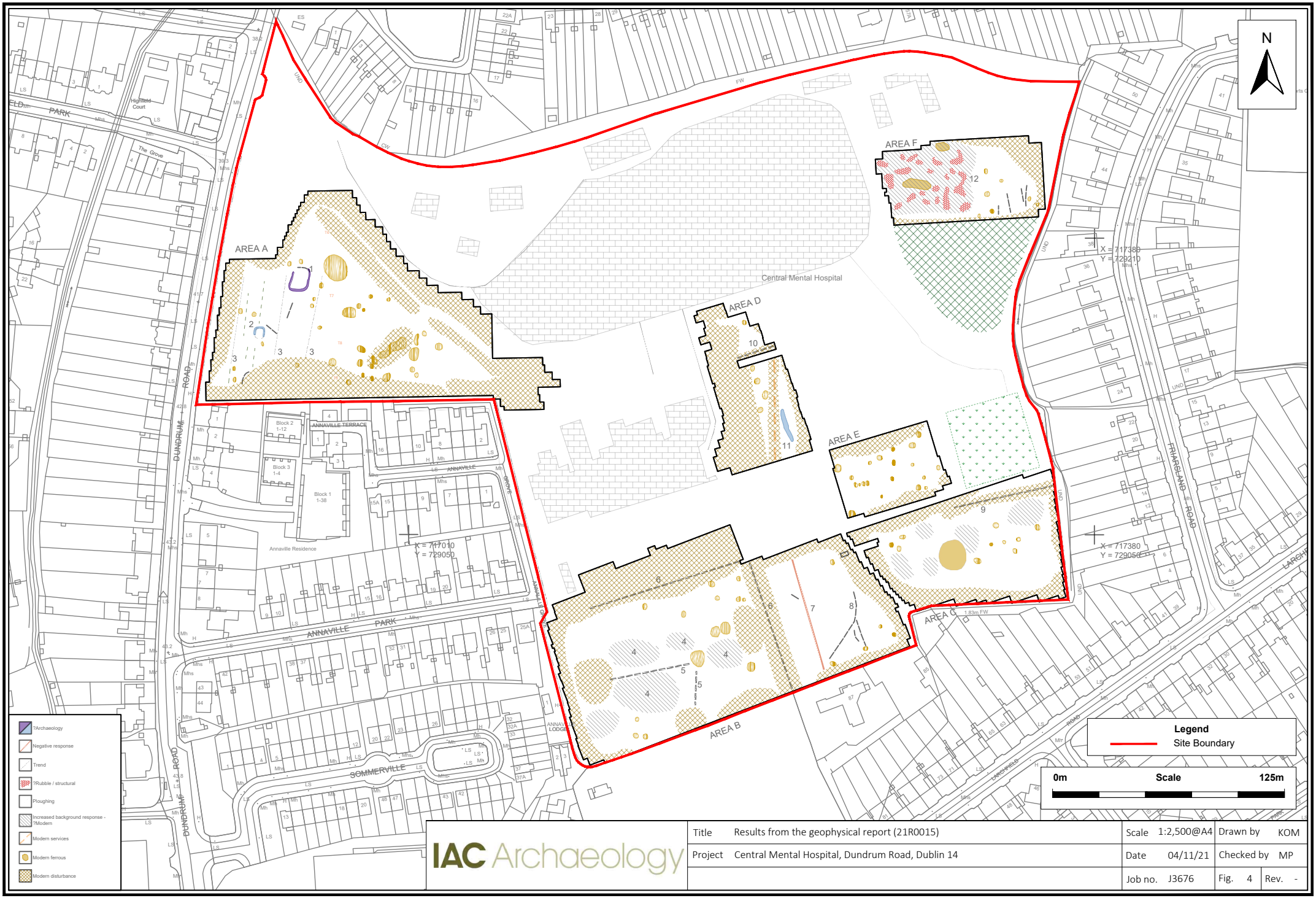


IAC Archaeology	Title: Extract from John Rocque's map (1756) and First edition OS map (1837) showing the proposed development	Scale: NTS@A4	Drawn by: KOM
	Project: Central Mental Hospital, Dundrum Road, Dublin 14	Date: 04/11/21	Checked by: MP
		Job no.: J3676	Fig.: 2 Rev.: -





IAC Archaeology	Title: Extract from the Second edition OS map (1872) and 25-inch OS map (1911) showing the proposed development	Scale: NTS@A4	Drawn by: KOM
	Project: Central Mental Hospital, Dundrum Road, Dublin 14	Date: 04/11/21	Checked by: MP
		Job no.: J3676	Fig.: 3 Rev.: -



IAC Archaeology

Title	Results from the geophysical report (21R0015)	Scale 1:2,500@A4	Drawn by KOM
Project	Central Mental Hospital, Dundrum Road, Dublin 14	Date 04/11/21	Checked by MP
		Job no. J3676	Fig. 4 Rev. -



IAC Archaeology

Title	Proposed test trench layout and test trenches excavated	Scale 1:2,500@A4	Drawn by KOM
Project	Central Mental Hospital, Dundrum Road, Dublin 14	Date 04/11/21	Checked by MP
		Job no. J3676	Fig. 5 Rev. -

Area A without geophysical survey overlay

716920 E
715220 N

716990 E
729220 N

T5

AA2

T4

C7

C9

T3

AA1

T2

C3

C5

T1

717990 E
729140 N

Legend

- Site Boundary
- Test Trench
- Archaeological Areas
- CXX — Cut number
- XXXXXX E / XXXXXX N — ITM
- Feature

0m Scale 30m

Area A with geophysical survey overlay

N

AREA A

T5

AA2

1

T4

C7

C9

T3

2

AA1

T2

C3

C5

3

3

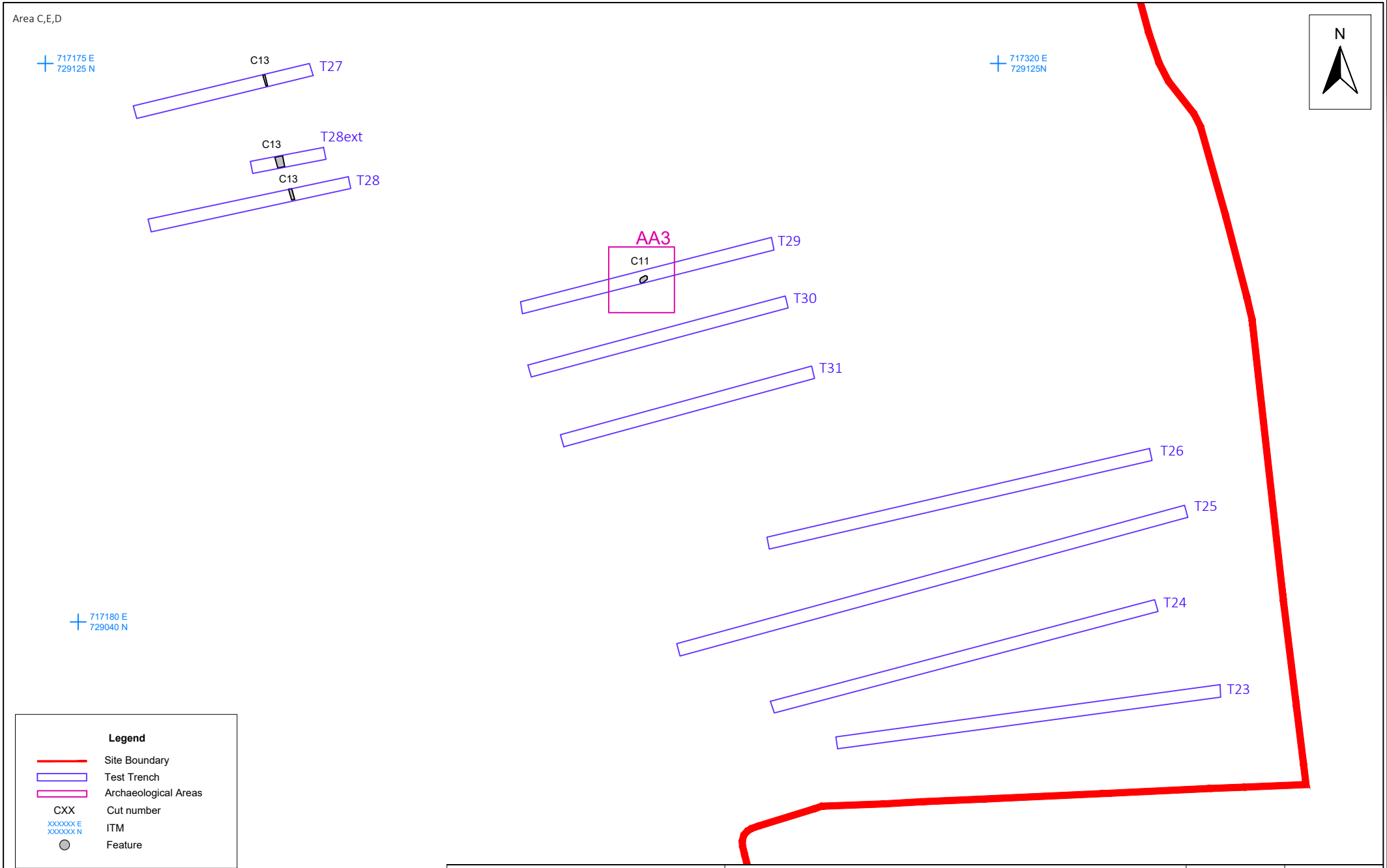
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T1

- ?Archaeology
- Negative response
- Trend
- ?Rubble / structural
- Ploughing
- Increased background response - ?Modern
- Modern services
- Modern ferrous
- Modern disturbance

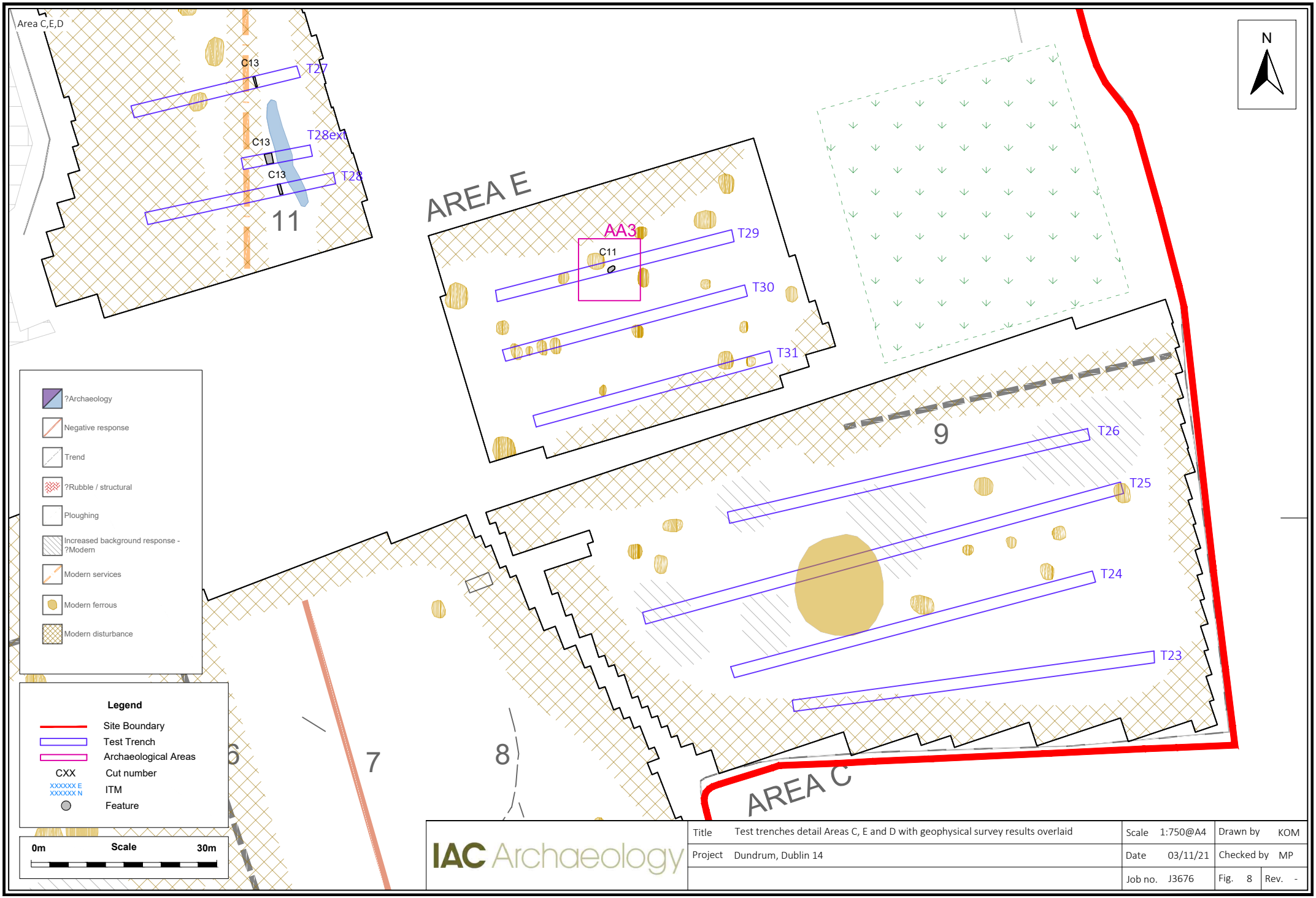
IAC Archaeology

Title	Test trenches detail Area A and Area A with geophysical survey results overlaid	Scale 1:750@A4	Drawn by KOM
Project	Dundrum, Dublin 14	Date 03/11/21	Checked by MP
		Job no. J3676	Fig. 6 Rev. -



IAC Archaeology

Title	Test trenches detail Areas C, E and D	Scale 1:750@A4	Drawn by KOM
Project	Dundrum, Dublin 14	Date 03/11/21	Checked by MP
		Job no. J3676	Fig. 7 Rev. -


Area C,E,D
C13
T27
C13
T28ext
C13
T28
11
AREA E
AA3
C11
T29
T30
T31
9
T26
T25
T24
T23
AREA C
6
7
8
N
?Archaeology
Negative response
Trend
?Rubble / structural
Ploughing
Increased background response - ?Modern
Modern services
Modern ferrous
Modern disturbance
Legend
Site Boundary
Test Trench
Archaeological Areas
CXX
Cut number
XXXXXX E
XXXXXX N
ITM
Feature
0m
Scale
30m
IAC Archaeology
Title
Test trenches detail Areas C, E and D with geophysical survey results overlaid
Scale
1:750@A4
Drawn by
KOM
Project
Dundrum, Dublin 14
Date
03/11/21
Checked by
MP
Job no.
J3676
Fig.
8
Rev.
-

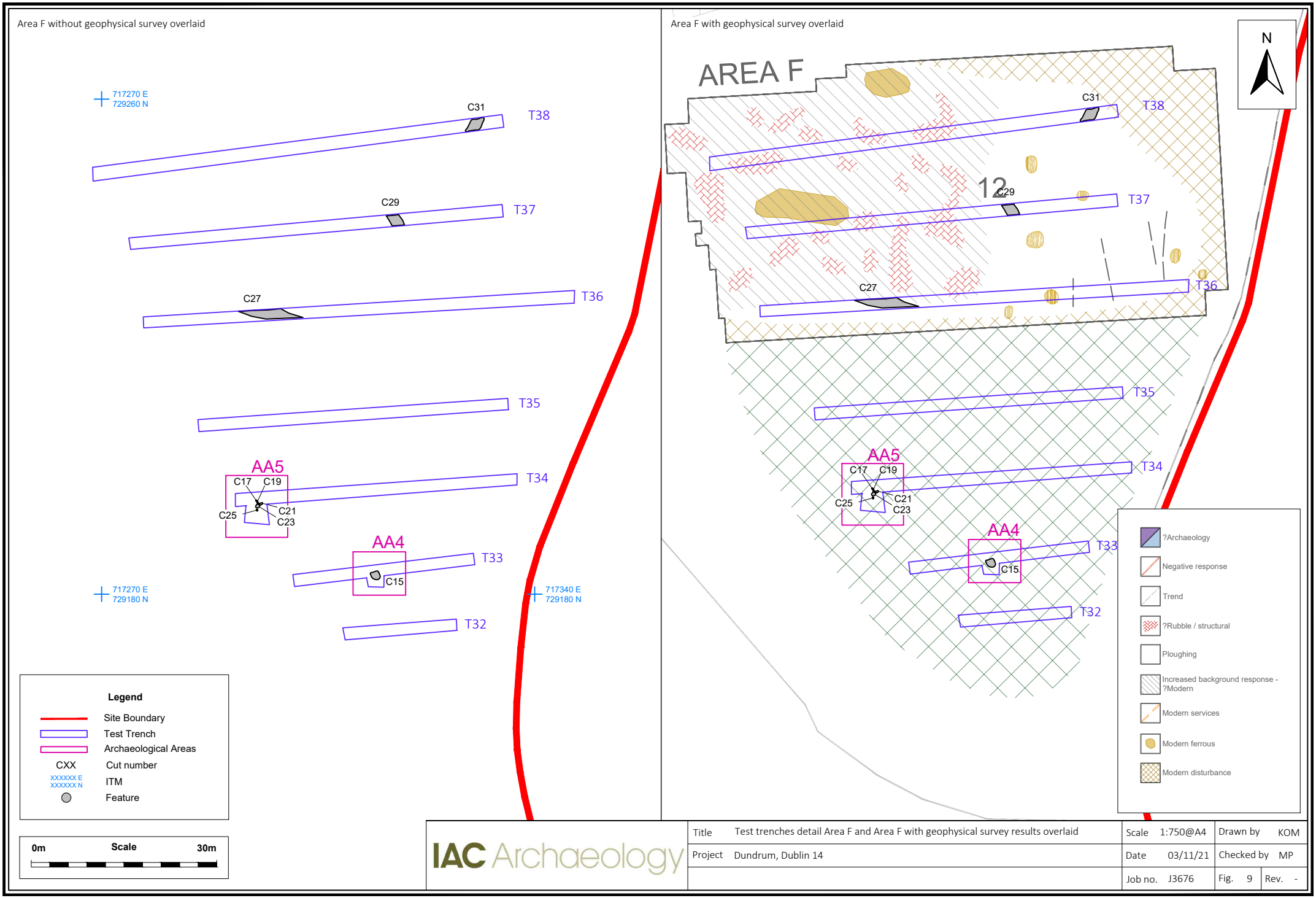

Area F without geophysical survey overlaid
717270 E
729260 N
C31
T38
C29
T37
C27
T36
T35
AA5
C17
C19
C25
C21
C23
T34
AA4
C15
T33
T32
717270 E
729180 N
717340 E
729180 N
Area F with geophysical survey overlaid
AREA F
12
N
?Archaeology
Negative response
Trend
?Rubble / structural
Ploughing
Increased background response - ?Modern
Modern services
Modern ferrous
Modern disturbance
Legend
Site Boundary
Test Trench
Archaeological Areas
CXX
Cut number
XXXXXX E
XXXXXX N
ITM
Feature
0m
Scale
30m
IAC Archaeology
Title
Test trenches detail Area F and Area F with geophysical survey results overlaid
Project
Dundrum, Dublin 14
Scale
1:750@A4
Date
03/11/21
Job no.
J3676
Drawn by
KOM
Checked by
MP
Fig.
9
Rev.
-



Plate 1 Trench 1, facing east



Plate 2 Trenches 1-4, facing west



Plate 3 Trench 2, facing west



Plate 4 Linear feature C5 in Trench 2, facing south



Plate 5 Linear feature C7 in Trench 4, facing south



Plate 6 Trench 4, facing east



Plate 7 Trench 23, facing west



Plate 8 Trenches 23-26, facing east



Plate 9 Trench 28, facing west



Plate 10 Linear feature C13 in Trench 28ext, facing north



Plate 11 Kiln C11 in Trench 29, facing south



Plate 12 Trench 30, facing west



Plate 13 Trench 33, facing east



Plate 14 Pit C15 in Trench 33, facing northwest



Plate 15 Cluster of pits C17-25 in Trench 34, facing south



Plate 16 Ditch C27 in Trench 36, facing north



Plate 17 Trench 37, facing east



Plate 18 Trench 38, facing west

CONSTRUCTION & DEMOLITION RESOURCE WASTE MANAGEMENT PLAN FOR A PROPOSED MIXED-USE DEVELOPMENT

ON LANDS AT THE CENTRAL MENTAL HOSPITAL, DUNDRUM ROAD, DUNDRUM, DUBLIN 14.

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The Land Development Agency

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Our Reference

CB/21/12152WMR01

Date of Issue

22 March 2022

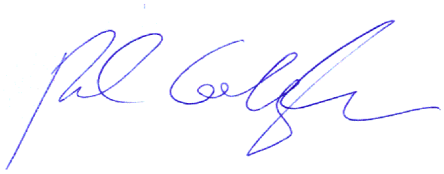
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Document History

Document Reference		Original Issue Date	
CB/21/12152WMR01		22 March 2022	
Revision Level	Revision Date	Description	Sections Affected

Record of Approval

Details	Written by	Approved by
Signature		
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Title	Principal Environmental Consultant	Director
Date	22 March 2022	22 March 2022

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1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Construction & Demolition Resource Waste Management Plan (C&D RWMP) on behalf of The Land Development Agency. The proposal is a mixed-use scheme, Strategic Housing Development with a total application site area of c.9.56 ha, on lands at the Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14. The proposed development will consist of 977 no, residential units along with nonresidential units including retail, café, medical, childcare and community centre units.

The purpose of this plan is to provide information necessary to ensure that the management of construction and demolition (C&D) waste at the site is undertaken in accordance with current legal and industry standards including the *Waste Management Acts 1996 - 2011* and associated Regulations [1], *Protection of the Environment Act 2003* as amended [2], *Litter Pollution Act 1997* as amended [3] and the *Eastern-Midlands Region Waste Management Plan 2015 – 2021* [4]. In particular, this plan aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible. It also seeks to provide guidance on the appropriate collection and transport of waste from the site to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil and/or water).

This C&D RWMP includes information on the legal and policy framework for C&D waste management in Ireland, estimates of the type and quantity of C&D waste to be generated by the proposed development and makes recommendations for management of different waste streams. The C&D RWMP should be viewed as a live document that will be update by the site construction contractor as and when changing site conditions require it to do so.

2.0 CONSTRUCTION & DEMOLITION WASTE MANAGEMENT IN IRELAND

2.1 National Level

The Irish Government issued a policy statement in September 1998 known as *'Changing Our Ways'* [5], which identified objectives for the prevention, minimisation, reuse, recycling, recovery and disposal of waste in Ireland. The target for C&D waste in this report was to recycle at least 50% of C&D waste within a five year period (by 2003), with a progressive increase to at least 85% over fifteen years (i.e. 2013).

In response to the *Changing Our Ways* report, a task force (Task Force B4) representing the waste sector of the already established Forum for the Construction Industry, released a report entitled '*Recycling of Construction and Demolition Waste'* [6]concerning the development and implementation of a voluntary construction industry programme to meet the Government's objectives for the recovery of C&D waste.

In September 2020, the Irish Government published a new policy document outlining a new action plan for Ireland to cover the period of 2020-2025. This plan *'A Waste Action Plan for a Circular Economy'* [7] (WAPCE), was prepared in response to the 'European Green Deal' which sets a roadmap for a transition to a new economy, where climate and environmental challenges are turned into opportunities, replacing the previous national waste management plan *"A Resource Opportunity"* (2012).

The WAPCE sets the direction for waste planning and management in Ireland up to 2025. This reorientates policy from a focus on managing waste to a much greater focus on creating circular patterns of production and consumption. Other policy statements of a number of public bodies already acknowledge the circular economy as a national policy priority.

The policy document contains over 200 measures across various waste areas including circular economy, municipal waste, consumer protection and citizen engagement, plastics and packaging, construction and demolition, textiles, green public procurement and waste enforcement.

One of the first actions to be taken was the development of the Whole of Government Circular Economy Strategy 2022-2023 'Living More, using Less' (2021) [8] to set a course for Ireland to transition across all sectors and at all levels of Government toward circularity and was issued in December 2021. It is anticipated that the Strategy will be updated in full every 18 months to 2 years.

The Environmental Protection Agency (EPA) of Ireland issued guildines the '*Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects' in November 2021* [9]. These guidelines replace the previous 2006 guidelines issued by The National Construction and Demolition Waste Council (NCDWC)and the Department of the Environment, Heritage and Local Government (DoEHLG) in 2006 [10]. The guidelines provide a practical and informed approach which is informed by best practice in the prevention and management of C&D wastes and resources from design to construction of a project, including consideration of the deconstruction of a project. These guidelines have been followed in the preparation of this document and include the following elements:

- Predicted C&D wastes and procedures to prevent, minimise, recycle and reuse wastes;
- Design teams roles and approach;
- Relevant EU, national and local waste policy, legislation and guidelines;
- Waste disposal/recycling of C&D wastes at the site;
- Provision of training for resource manager (RM) and site crew;
- Details of proposed record keeping system;
- Details of waste audit procedures and plan; and
- Details of consultation with relevant bodies i.e. waste recycling companies, Local Authority, etc.

Section 3 of the Guidelines identifies thresholds above which there is a requirement for the preparation of a bespoke C&D RWMP for developments. The new guidance classifies developments on a two-tiered system. Developments which do not exceed any of the following thresholds may be classed as Tier 1 development, which require a simplified C&D RWMP:

- New residential development of less than 10 dwellings.
- Retrofit of 20 dwellings or less.
- New commercial, industrial, infrastructural, institutional, educational, health and other developments with an aggregate floor area less than 1,250m^2.
- Retrofit of commercial, industrial, infrastructural, institutional, educational, health and other developments with an aggregate floor area less than 2,000m^2; and
- Demolition projects generating in total less than 100m^3 in volume of C&D waste.

Developments above these thresholds are classed as Tier-2 projects

This development requires a C&D RWMP as a Tier 2 development as they are above following criterion:

- New residential development of less than 10 dwellings;
- New commercial, industrial, infrastructural, institutional, educational, health and other developments with an aggregate floor area less than 1,250m^2; and
- Demolition projects generating in total less than 100m^3 in volume of C&D waste.

Other guidelines followed in the preparation of this report include *'Construction and Demolition Waste Management – a handbook for Contractors and Site Managers'* [11], published by FÁS and the Construction Industry Federation in 2002 and the previous guildines 'Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects' (2006).

These guidance documents are considered to define best practice for C&D projects in Ireland and describe how C&D projects are to be undertaken such that environmental impacts and risks are minimised and maximum levels of waste recycling are achieved.

2.2 Regional Level

The proposed development is located in the Local Authority area of Dún Laoghaire–Rathdown County Council (DLRCC).

The *Eastern-Midlands Region Waste Management Plan 2015 – 2021* is the regional waste management plan for the DLRCC area published in May 2015. Currently the EMR and other regional waste management plans are under review and the Regional Waste Management Planning Offices expect to publish the final plan in early 2022.

The Regional Plan sets out the strategic targets for waste management in the region and sets a specific target for C&D waste of *"70% preparing for reuse, recycling and other recovery of construction and demolition waste" (excluding natural soils and stones and hazardous wastes)* to be achieved by 2020.

The DLRCC *County Development Plan 2016 – 2022* (2016) [12] sets out a number of objectives for Dún Laoghaire–Rathdown County Council in line with the objectives of the regional waste management plan.

Waste policies with a particular relevance to this proposed development are:

Policy:

- **Policy EI12**: Waste Management Strategy: It is Council policy to conform to the European Union and National Waste Management Hierarchy as follows:
    - Waste prevention
    - Minimisation
    - Re-use
    - Waste recycling
    - Energy recovery and
    - Disposal

  subject to economic and technical feasibility and Environmental Assessment.
- **Policy EI13**: Waste Plans: It is Council policy to publish plans for the collection, treatment, handling and disposal of waste in accordance with the provisions of the Waste Management Acts 1996 (as amended) and Protection of the Environment Act 2003 (as amended).
- **Policy EI14**: Private Waste Companies: It is Council policy to ensure that all waste that is disposed of by private waste companies is done so in compliance with the requirements of the Environmental Protection Agency and the Waste Management Legislation and in accordance with the Planning Code.
- **Policy EI16:** Waste Re-use and Recycling: It is Council policy to promote the increased re-use and re-cycling of materials from all waste streams. The Council will co-operate with other agencies in viable schemes for the extraction of useful materials from refuse for re-use or re-cycling and will adopt the National targets as stated in the 'Dublin Regional Waste Management Plan 2005-2010'.

The Draft *Dún Laoghaire-Rathdown County Development Plan 2022 – 2028* [13] sets out a number of policies for the Dún Laoghaire-Rathdown area in line with the objectives of the regional waste management plan.

Proposed waste policies with a particular relevance to the proposed development are as follows:

Policy Objective EI12: Resource Management

It is a Policy Objective to implement the Eastern-Midlands Region Waste Management Plan 2015-2021 and subsequent plans, in supporting the transition from a waste management economy towards a circular economy, to enhance employment and increase the value recovery and recirculation of resources. Underpinning this objective is the requirement to conform to the European Union and National Waste Management Hierarchy of the most favoured options for waste as illustrated below subject to economic and technical feasibility and Environmental Assessment.

Policy Objective EI13: Waste Management Infrastructure, Prevention, Reduction, Reuse and Recycling

- To support the principles of the circular economy, good waste management and the implementation of best international practice in relation to waste management in order for the County and the Region to become self-sufficient in terms of resource and waste management and to provide a waste management infrastructure that supports this objective.

- To provide for civic amenity facilities and bring centres as part of an integrated waste collection system in accessible locations throughout the County and promote the importance of kerbside source segregated collection of household and commercial waste as the best method to ensure the quality of waste presented for recycling is preserved.

- To ensure any waste amenity facilities adhere to the Waste Regional Offices Waste Management Infrastructure siting guidelines.

- To develop a County wide network of multi material recycling centres, bring centres and a re-use centre and to require the provision of adequately-sized recycling facilities in new commercial and large-scale residential developments, where appropriate.

- To require the inclusion of such centres in all large retail developments to maximise access by the public. To ensure new developments are designed and constructed in line with the Council's Guidelines for Waste Storage Facilities

Policy Objective EI14: Hazardous Waste

It is a Policy Objective to adhere to the recommendations of the 'National Hazardous Waste Management Plan 2014-2020' and any subsequent plan, and to co-operate with other agencies, to plan, organise, authorise and supervise the disposal of hazardous waste streams, including hazardous waste identified during construction and demolition projects.

2.3 Legislative Requirements

The primary legislative instruments that govern waste management in Ireland and applicable to the project are:

- Waste Management Act 1996 -2021 (No. 10 of 1996) as amended
- Environmental Protection Act 1992 (No. 7 of 1992) as amended.
- Litter Pollution Act 1997 (No. 12 of 1997) as amended.

- Planning and Development Act 2000 (No. 30 of 2000) as amended [14].

One of the guiding principles of European waste legislation, which has in turn been incorporated into the *Waste Management Act 1996 as amended* and subsequent Irish legislation, is the principle of *"Duty of Care"*. This implies that the waste producer is responsible for waste from the time it is generated through until its legal recycling, recovery or disposal (including its method of disposal). As it is not practical in most cases for the waste producer to physically transfer all waste from where it is produced to the final destination, waste contractors will be employed to physically transport waste to the final destination. Following on from this is the concept of *"Polluter Pays"* whereby the waste producer is liable to be prosecuted for pollution incidents, which may arise from the incorrect management of waste produced, including the actions of any contractors engaged (e.g. for transportation and disposal/recovery/recycling of waste).

It is therefore imperative that the client ensures that the waste contractors engaged by construction contractors are legally compliant with respect to waste transportation, recycling, recovery and disposal. This includes the requirement that a contractor handle, transport and recycle/recover/dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

A collection permit to transport waste must be held by each waste contractor which is issued by the National Waste Collection Permit Office (NWCPO). Waste receiving facilities must also be appropriately permitted or licensed. Operators of such facilities cannot receive any waste, unless in possession of a Certificate of Registration (COR) or waste permit granted by the relevant Local Authority under the *Waste Management (Facility Permit & Registration) Regulations 2007 and Amendments* or a waste or IE licence granted by the EPA. The COR/permit/licence held will specify the type and quantity of waste able to be received, stored, sorted, recycled, recovered and/or disposed of at the specified site.

2.4 Local Authority Guidelines

DLRCC's Waste Management Division have issued *Guidance Notes for Environmental Management of Construction Projects* (2020) [15] which provide good practice guidance for the preparation of Construction & Demolition Waste Management Plans for in accordance with the DOEHLG "*Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects"*.

The objective of the guidelines is to allow developers and designers to demonstrate to local planning and waste management authorities that they have considered how the design and the operation of waste management services will enable construction and demolition contractors to effectively manage their wastes arisings.

The Plan should document proposals for the management of C&D waste as concisely as possible. For clarity, besides assisting assessment and implementation, the Project C&D Waste Management Plan should be organised systematically. Individual headings should be provided, describing the following:

- Description of the Project;
- Wastes arising including proposals for minimisation/reuse/recycling;
- Estimated cost of waste management;
- Demolition Plan;
- Roles including training and responsibilities for C&D Waste;
- Record keeping procedures; and
- Waste auditing protocols

This C&D RWMP has been prepared to demonstrate exactly that and aims to do that in a comprehensive manner.

3.0 Design Approach

The client and the design team have integrated the *'Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects'* guidelines into the design workshops, to help review processes, identify and evaluate resource reduction measures and investigate the impact on cost, time, quality, buildability, second life and management post demolition and construction. Further details on these design principals can be found within the aforementioned guidance document.

The design team have undertaken the design process in line with the international best practice principles to firstly prevent wastes, reuse where possible and thereafter sustainably reduce and recover materials. The below sections have been the focal point of the design process and material selections and will continued to be analysed and investigated throughout the design process and when selecting material.

The approaches presented are based on international principles of optimising resources and reducing waste on construction projects through:

- Prevention;
- Reuse;
- Recycling;
- Green Procurement Principles;
- Off-Site Construction;
- Materials Optimisation; and
- Flexibility and Deconstruction.

3.1 Designing For Prevention, Reuse and Recycling

Undertaken at the outset and during project feasibility and evaluation the Client and Design Team considered:

- Establishing the potential for any reusable site assets (buildings, structures, equipment, materials, soils, etc.);
- The potential for refurbishment and refit of existing structures or buildings rather than demolition and new build;
- Assessing any existing buildings on the site that can be refurbished either in part or wholly to meet the Client requirements; and
- Enabling the optimum recovery of assets on site.

3.2 Designing for Green Procurement

Waste prevention and minimisation pre-procurement have been discussed and will be further discussed in this section. The Design Team will discuss proposed design solutions, encourage innovation in tenders and incentivise competitions to recognise sustainable approaches. They should also discuss options for packaging reduction with the main Contractor and subcontractors/suppliers using measures such as 'Just-in-Time' delivery and use ordering procedures that avoid excessive waste. The Green procurement extends from the planning stage into the detailed design and tender stage and will be an ongoing part of the long-term design and selection process for this development.

3.3 Designing for Off-Site Construction

Use of off-site manufacturing has been shown to reduce residual wastes by up to 90% (volumetric building versus traditional). The decision to use offsite construction is typically cost led but there are significant benefits for resource management. Some further considerations for procurement which are being investigated as part of the planning stage design process are listed as follows:

- Modular buildings as these can displace the use of concrete and the resource losses associated with concrete blocks such as broken blocks, mortars, etc.;
    - Modular buildings are typically pre-fitted with fixed plasterboard and installed insulation, eliminating these residual streams from site.
- Use of pre-cast structural concrete panels which can reduce the residual volumes of concrete blocks, mortars, plasters, etc.;
- The use of prefabricated composite panels for walls and roofing to reduce residual volumes of insulation and plasterboards;
- Using pre-cast hollow-core flooring instead of in-situ ready mix flooring or timber flooring to reduce the residual volumes of concrete/formwork and wood/packaging, respectively; and
- Designing for the preferential use of offsite modular units.

3.4 Designing for Materials Optimisation During Construction

To ensure manufacturers and construction companies adopt lean production models, including maximising the reuse of materials onsite.. This helps to reduce the environmental impacts associated with transportation of materials and from waste management activities. This includes investigating the use of standardised sizes for certain materials to help reduce the amount of offcuts produced on site, focusing on promotion and development of off-site manufacture.

3.5 Designing for Flexibility and Deconstruction

Design flexibility has and will be investigated throughout the design process to ensure that where possible products (including buildings) only contain materials that can be recycled and are designed to be easily disassembled. Material efficiency is being considered for the duration and end of life of a building project to produce; flexible, adaptable spaces that enable a resource-efficient, low-waste future change of use; durability of materials and how they can be recovered effectively when maintenance and refurbishment are undertaken and during disassembly/deconstruction.

4.0 DESCRIPTION OF THE PROJECT

4.1 Location, Size and Scale of the Development

The Land Development Agency intend to apply to An Bord Pleanála (the Board) for permission for a Strategic Housing Development with a total application site area of c.9.56 ha, on lands at the Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14.

The development will consist of the demolition of existing structures (3,497 sq m), including:

- Former swimming pool / sports hall and admissions unit (2,750 sq m);
- Two storey redbrick building (305 sq m);
- Temporary structures including portacabins (438 sq m)
- Removal of security fence at Dundrum Road entrance;
- Demolition of element of Gatelodge (4 sq m)

The development will also consist of alterations and partial demolition of the perimeter wall, including:

- Removal of section of perimeter wall adjacent to Rosemount Green (south);
- Formation of a new opening in perimeter wall at Annaville Grove to provide a pedestrian and cyclist access and associated gate;
- Removal of section of perimeter wall at the existing Dundrum Road access;
- Alterations and removal of sections of wall adjacent to Dundrum Road, including the provision of a new vehicular, cyclist and pedestrian access;
- Alterations and removal of section of perimeter wall adjacent to Mulvey Park to provide a pedestrian and cyclist access and associated gate.

The development with a total gross floor area of c. 105,866 sq m (c. 105,944 sq m including retained existing buildings), will consist of 977 no. residential units comprising:

- 940 no. apartments (consisting of 53 no. studio units; 431 no. one bedroom units; 24 no. two bedroom (3 person) units; 314 no. two bedroom (4 person) units; and 118 no. 3 bedroom units) arranged in 9 blocks (Blocks 02-10) ranging between 2 and 6 storeys in height, together with private and communal amenity open space provision and ancillary residential facilities;
- 17 no. duplex apartments (consisting of 3 no. 2 bedroom units and 14 no. 3 bedrooms units located in Block 02, 08 and 09);
- 20 no. two and three storey houses (consisting of 7 no. three bedroom units and 13 no. 4 bedrooms units) and private rear gardens;

The development will also consist of 3,889 sq m of non-residential uses, comprising:

- Change of use and renovation of existing Gate Lodge building to provide a café unit (78 sq m);
- 7 no. retail units (1,419 sq m);
- 1 no. medical unit (245 sq m)
- A new childcare facility (463 sq m);
- A new community centre facility, including a multi-purpose hall, changing rooms, meeting rooms, storage and associated facilities (1,684 sq m);

The development will also consist of the provision of c.3.01 hectares (c. 30,146 sq m) of public open space and related play areas; hard and soft landscaping including internal roads, pathways and boundary treatments, car parking (547 no. spaces in total, including car sharing and accessible spaces); vehicle charging points; bicycle parking (long and short stay spaces including secure stands); storage areas; 8 no. ESB substations, piped infrastructural services and connections; plant; waste management provision; SuDS measures; sustainability measures (including green roofs and solar panels); signage; public lighting; and all site development and excavation works above and below ground.

4.2 Details of the Non-Hazardous Wastes to be produced

There will be waste materials generated from the demolition and refurbishment of some of the existing buildings and hardstanding areas on site, as well as from the further excavation of the building foundations. Further details can be found in section 3.1 project description or in chapter 5 Description of the Proposed Project of the EIAR. The volume of waste generated from demolition will be more difficult to segregate than waste generated from the construction phase, as many of the building materials will be bonded together or integrated i.e. plasterboard on timber ceiling joists, steel embedded in concrete, etc.

There will be topsoil, sub soil, clay and made ground excavated to facilitate site preparation for the construction of building and road foundations. The volume of material has been estimated by the project engineer (Barrett Mahony) to be c. 56,677m^3. It is envisaged that all of the excavated material apart from 7,199m^3 (which may remain as fill) will be required to be removed off site. Material moved offsite will be taken for offsite reuse, recovery and/or disposal. Correct classification and segregation of the excavated material is required to ensure that any potentially contaminated materials are identified and handled in a way that will not impact negatively on workers or the environment.

During the construction phase there may be a surplus of building materials, such as timber off-cuts, broken concrete blocks, cladding, plastics, metals and tiles generated. There may also be excess concrete during construction which will need to be disposed of. Plastic and cardboard waste from packaging and supply of materials will also be generated.

Excavation will be required for site levelling and services. Volumes of excavated material will be minimal, and it is envisaged that any excavated material will be removed off site. If any material is removed off site, it will be taken for appropriate reuse, recycling or disposal.

Waste will also be generated from construction workers e.g. organic/food waste, dry mixed recyclables (wastepaper, newspaper, plastic bottles, packaging, aluminium cans, tins and Tetra Pak cartons), mixed non-recyclables and potentially sewage sludge from temporary welfare facilities provided onsite during the construction phase. Waste printer/toner cartridges, waste electrical and electronic equipment (WEEE) and waste batteries may also be generated infrequently from site offices.

4.3 Potential Hazardous Wastes to be produced

4.3.1 Contaminated Soil

Soil investigations were undertaken by Site Investigation Ltd. In March, August and September 2021, with 70 samples being sent for environmental testing and analysis against the Waste Acceptance Criteria (WAC). Following the receipt of results from testing a waste classification report was prepared by Site Investigations Ltd. in accordance with the EPA publication entitled *'Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous'* [16] using the *HazWasteOnline* application.

Of the 70 no. samples tested, 36 no. were within the Inert waste threshold, 23 no. were outside the Inert threshold but within the Non-Hazardous threshold and 11 no. were outside of the test limits for Non-Hazardous materials. In the 11 no. cases, the samples were taken at a shallow level between 0.2 & 0.4m bgl and all failed in the test for Total Organic Carbon Content only. This likely indicates the presence of wood in the samples.

Any potentially contaminated material is encountered, it will need to be segregated from clean/inert material, tested and classified as either non-hazardous or hazardous in accordance with the EPA publication entitled *'Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous'*. The material will then need to be classified as clean, inert, non-hazardous or hazardous in accordance with the *EC Council Decision 2003/33/EC* [17], which establishes the criteria for the acceptance of waste at landfills.

In the event that Asbestos containing materials (ACMs) are found, the removal will only be carried out by a suitably permitted waste contractor, in accordance with *S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010.* All asbestos will be taken to a suitably licensed or permitted facility.

In the event that hazardous soil, or historically deposited waste is encountered during the construction phase, the contractor will notify DLRCC and provide a Hazardous/Contaminated Soil Management Plan, to include estimated tonnages, description of location, any relevant mitigation, destination for disposal/treatment, in addition to information on the authorised waste collector(s).

4.3.2 Invasive Plant Species

Multiple baseline ecological surveys were undertaken by Altmer Ltd, part of these surveys were designated to identify the presence and location of any invasive species (listed under the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2015)). No Japanese knotweed was located onsite however a patch of Himalayan balsam was located in the north west corner of the site beside the corner wall

If during the process of construction any schedule 3 invasive species are located on site an invasive species management plan will be prepared for the site to prevent the introduction or spread of any invasive species within the footprint of the works. An invasive species management plan, if required, will set out best practice control methods.

4.3.3 Asbestos

Asbestos refurbishment / demolition surveys will be undertaken prior to the refurbishment and demolition of any buildings onsite.

If any asbestos or asbestos containing materials are found, their removal will be carried out by a suitably qualified contractor and ACMs will only be removed from site by a suitably permitted / licenced waste contractor, in accordance with *S.I. No. 589 of 2010 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010.* All material will be taken to a suitably licensed or permitted facility.

4.3.4 Fuel/Oils

As fuels and oils are classed as hazardous materials, any on-site storage of fuel/oil, all storage tanks and all draw-off points will be bunded (or stored in double-skinned tanks) and located in a dedicated, secure area of the site. Provided that these requirements are adhered to and site crew are trained in the appropriate refuelling techniques, it is not expected that there will be any fuel/oil wastage at the site.

4.3.5 Other known Hazardous Substances

Paints, glues, adhesives and other known hazardous substances will be stored in designated areas. They will generally be present in small volumes only and associated waste volumes generated will be kept to a minimum. Wastes will be stored in appropriate receptacles pending collection by an authorised waste contractor.

In addition, WEEE (containing hazardous components), printer toner/cartridges, batteries (Lead, Ni-Cd or Mercury) and/or light bulbs and other mercury containing waste may be generated from during C&D activities or temporary site offices. These wastes (if encountered) will be stored in appropriate receptacles in designated areas of the site pending collection by an authorised waste contractor.

5.0 Roles and Responsibilities

The *Best Practice Guidelines on the Preparation of Resource Waste Management Plans for Construction and Demolition Projects* promotes that a RM should be appointed. The RM may be performed by number of different individuals over the life-cycle of the Project, however it is intended to be a reliable person chosen from within

the Planning/Design/Contracting Team, who is technically competent and appropriately trained, who takes the responsibility to ensure that the objectives and measures within the Project C&D RWMP are complied with. The RM is assigned the requisite authority to meet the objective and obligations of the C&D RWMP. The role will include the important activities of conducting waste checks/audits and adopting construction and demolition methodology that is designed to facilitate maximum reuse and/or recycling of waste.

5.1 Role of the Client

The Client are the body establishing the aims and the performance targets for the project.

- The Client has commissioned the preparation and submission of a preliminary C&D RWMP as part of the design and planning submission;
- The Client is to commission the preparation and submission of an updated C&D RWMP as part of the construction tendering process;
- The Client will ensure that the C&D RWMP is agreed on and submitted to the local authority prior to commencement of works on site;
- The Client is to request the end-of-project C&D RWMP from the Contractor.

5.2 Role of the Client Advisory Team

The Client Advisory Team or Design Team is formed of architects, consultants, quantity surveyors and engineers and is responsible for:

- Drafting and maintaining the C&D RWMP through the design, planning and procurement phases of the project;
- Appointing a RM to track and document the design process, inform the Design Team and prepare the C&D RWMP.
- Including details and estimated quantities of all projected waste streams with the support of environmental consultants/scientists. This should also include data on waste types (e.g. waste characterisation data, contaminated land assessments, site investigation information) and prevention mechanisms (such as by-products) to illustrate the positive circular economy principles applied by the Design Team;
- Managing and valuing the demolition work with the support of quantity surveyors;
- Handing over of the C&D RWMP to the selected Contractor upon commencement of construction of the development, in a similar fashion to how the safety file is handed over to the Contractor;
- Working with the Contractor as required to meet the performance targets for the project.

5.3 Future Role of the Contractor

The future demolition and construction Contractors have not yet been decided upon for this C&D RWMP. However, once select they will have major roles to fulfil. They will be responsible for:

- Preparing, implementing and reviewing the (including the Pre-Demolition) C&D RWMP throughout the demolition and construction phases (including the management of all suppliers and sub-contractors) as per the requirements of these guidelines;

- Identifying a designated and suitably qualified RM who will be responsible for implementing the C&D RWMP;
- Identifying all hauliers to be engaged to transport each of the resources / wastes off-site;
- Implementing waste management policies whereby waste materials generated on site are to be segregated as far as practicable;
- Renting and operating a mobile-crusher to crush concrete for temporary reuse onsite during construction and reduce the amount of HGV loads required to remove material from site;
- Applying for the appropriate waste permit to crush concrete onsite;
- Identifying all destinations for resources taken off-site. As above, any resource that is legally classified as a 'waste' must only be transported to an authorised waste facility;
- End-of-waste and by-product notifications addressed with the EPA where required;
- Clarification of any other statutory waste management obligations, which could include on-site processing;
- Full records of all resources (both wastes and other resources) should be maintained for the duration of the project; and
- Preparing a C&D RWMP Implementation Review Report at project handover.

6.0 Key Materials & Quantities

6.1 Project Resource Targets

Project specific resource and waste management targets for the site have not yet been set and this information should be updated for these targets once these targets have been confirmed by the client. However, it is expected for projects of this nature that a minimum of 70% of waste is fully re-used, recycled or recovered. Target setting will inform the setting of project-specific benchmarks to track target progress. Typical Key Performance Indicators (KPIs) that may be used to set targets include (as per guidelines):

- Weight (tonnes) or Volume (m^3) of waste generated per construction value;
- Weight (tonnes) or Volume (m^3) of waste generated per construction floor area (m^2);
- Fraction of resource reused on site;
- Fraction of resource notified as by-product;
- Fraction of waste segregated at source before being sent off-site for recycling/recovery; and
- Fraction of waste recovered, fraction of waste recycled, or fraction of waste disposed.

6.2 Main C&D Waste Categories

The main non-hazardous and hazardous waste streams that could be generated by the construction activities at a typical site are shown in Table 6.1. The List of Waste (LoW) code (as effected from 1 June 2015) (also referred to as the European Waste Code or EWC) for each waste stream is also shown.

Table 6.1 Typical waste types generated and LoW codes (*individual waste types may contain hazardous substances)

Waste Material	LoW/EWC Code
Concrete, bricks, tiles, ceramics	17 01 01-03 & 07
Wood, glass and plastic	17 02 01-03
Treated wood, glass, plastic, containing hazardous substances	17-02-04*
Bituminous mixtures, coal tar and tarred products	17 03 01*, 02 & 03*
Metals (including their alloys) and cable	17 04 01-11
Soil and stones	17 05 03* & 04
Gypsum-based construction material	17 08 01* & 02
Paper and cardboard	20 01 01
Mixed C&D waste	17 09 04
Green waste	20 02 01
Electrical and electronic components	20 01 35 & 36
Batteries and accumulators	20 01 33 & 34
Liquid fuels	13 07 01-10
Chemicals (solvents, pesticides, paints, adhesives, detergents etc.)	20 01 13, 19, 27-30
Insulation materials	17 06 04
Organic (food) waste	20 01 08
Mixed Municipal Waste	20 03 01

7.0 RESOURCE AND WASTE MANAGEMENT

7.1 Demolition Waste Generation

There will be waste materials generated from the demolition and renovation of some of the existing buildings and hardstanding areas on site, as well as from the further excavation of the building foundations. Further details can be found in section 4.1 project description or in chapter 5 Description of the Proposed Project of the EIAR. The demolition areas are identified in the planning drawings provided with this application. The anticipated demolition waste and rates of reuse, recycling / recovery and disposal are shown in Table 7.1, below.

Table 7.1 *Estimated off-site reuse, recycle and disposal rates for demolition waste*

Waste Type	Tonnes	Reuse		Recycle / Recovery		Disposal	
		%	Tonnes	%	Tonnes	%	Tonnes
Glass	96.8	0	0.0	85	82.3	15	14.5
Concrete, Bricks, Tiles, Ceramics	548.8	30	164.6	65	356.7	5	27.4
Plasterboard	43.0	30	12.9	60	25.8	10	4.3
Asphalts	10.8	0	0.0	25	2.7	75	8.1
Metals	161.4	5	8.1	80	129.1	15	24.2
Slate	86.1	0	0.0	85	73.2	15	12.9
Timber	129.1	10	12.9	60	77.5	30	38.7
Total	**1076.1**		**198.5**		**747.4**		**130.2**

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7.2 Construction Waste Generation

Table 7.2 shows the breakdown of C&D waste types produced on a typical site based on data from the EPA *National Waste Reports* [18], *the GMIT* [19] and other research reports.

Table 7.2 Waste materials generated on a typical Irish construction site

Waste Types	%
Mixed C&D	33
Timber	28
Plasterboard	10
Metals	8
Concrete	6
Other	15
Total	**100**

Table 7.3 shows the predicted construction waste generation for the proposed development based on the information available to date along with the targets for management of the waste streams. The predicted waste amounts are based on an average largescale development waste generation rate per m^2, using the waste breakdown rates shown in Table 7.2 and the schedule of areas supplied by the project architects.

Table 7.3 Estimated off-site reuse, recycle and disposal rates for construction waste

Waste Type	Tonnes	Reuse		Recycle/Recovery		Disposal	
		%	Tonnes	%	Tonnes	%	Tonnes
Mixed C&D	2078.7	10	207.9	80	1662.9	10	207.9
Timber	1763.7	40	705.5	55	970.1	5	88.2
Plasterboard	629.9	30	189.0	60	377.9	10	63.0
Metals	503.9	5	25.2	90	453.5	5	25.2
Concrete	377.9	30	113.4	65	245.7	5	18.9
Other	944.9	20	189.0	60	566.9	20	189.0
Total	**6299.0**		**1429.9**		**4277.0**		**592.1**

In addition to the information in Table 7.3, the quantity of excavated material that will be generated has been estimated to be c. 56,677m^3. Any suitable excavated material will be temporarily stockpiled for reuse as fill, where possible, reuse on site is expected to be limited to structural fill and it is envisaged that 7,199m^3 will be retained for that purpose. It is expected that all of the remaining excavated material is to be removed off site for appropriate reuse, recovery and/or disposal.

It should be noted that until final materials and detailed construction methodologies have been confirmed, it is difficult to predict with a high level of accuracy the construction waste that will be generated from the proposed works as the exact materials and quantities may be subject to some degree of change and variation during the construction process.

7.3 Proposed Resource and Waste Management Options

Waste materials generated will be segregated on site, where it is practical. Where the on-site segregation of certain wastes types is not practical, off-site segregation will be carried out. There will be skips and receptacles provided to facilitate segregation at source where feasible. All waste receptacles leaving site will be covered or enclosed.

The appointed waste contractor will collect and transfer the wastes as receptacles are filled. There are numerous waste contractors in the DLRCC Region that provide this service.

All waste arisings will be handled by an approved waste contractor holding a current waste collection permit. All waste arising's requiring disposal off-site will be reused, recycled, recovered or disposed of at a facility holding the appropriate registration, permit or licence, as required.

Written records will be maintained by the contractor(s) detailing the waste arising throughout the C&D phases, the classification of each waste type, waste collection permits for all waste contactors who collect waste from the site and COR/permit or licence for the receiving waste facility for all waste removed off site for appropriate reuse, recycling, recovery and/or disposal

Dedicated bunded storage containers will be provided for hazardous wastes which may arise such as batteries, paints, oils, chemicals etc, if required.

The management of the main waste streams is outlined as follows:

Topsoil and Subsoil

The waste hierarchy states that the preferred option for waste management is prevention and minimisation of waste, followed by preparing for reuse and recycling / recovery, energy recovery (i.e. incineration) and, least favoured of all, disposal. The excavations are required to facilitate construction works so the preferred option (prevention and minimisation) cannot be accommodated for the excavation phase.

When material is removed off- site it could be reused as a by-product (and not as a waste). If this is done, it will be done in accordance with Article 27 of the *European Communities (Waste Directive) Regulations 2011*, which requires that certain conditions are met and that by-product notifications are made to the EPA via their online notification form. Excavated material should not be removed from site until approval from the EPA has been received. The potential to reuse material as a by-product will be confirmed during the course of the excavation works, with the objective of eliminating any unnecessary disposal of material.

The next option (beneficial reuse) may be appropriate for the excavated material, pending environmental testing to classify the material as hazardous or non-hazardous in accordance with the EPA *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous* publication. Clean inert material may be used as fill material in other construction projects or engineering fill for waste licensed sites. Beneficial reuse of surplus excavation material as engineering fill may be subject to further testing to determine if materials meet the specific engineering standards for their proposed end use.

Any nearby sites requiring clean fill/capping material will be contacted to investigate reuse opportunities for clean and inert material. If any of the material is to be reused on another site as a by-product (and not as a waste), this will be done in accordance with Article 27. Similarly, if any soils/stones are imported onto the site from another construction site as a by-product, this will also be done in accordance with Article 27. Article 27 will be investigated to see if the material can be imported onto this site for beneficial reuse instead of using virgin materials.

If the material is deemed to be a waste, then removal and reuse / recovery / disposal of the material will be carried out in accordance with the *Waste Management Acts 1996 – 2011* as amended, the *Waste Management (Collection Permit) Regulations 2007* as amended and the *Waste Management (Facility Permit & Registration) Regulations 2007* as amended. Once all available beneficial reuse options have been exhausted,

the options of recycling and recovery at waste permitted and licensed sites will be considered.

In the event that contaminated material is encountered and subsequently classified as hazardous, this material will be stored separately to any non-hazardous material. It will require off-site treatment at a suitable facility or disposal abroad via Transfrontier Shipment of Wastes (TFS).

Bedrock
While it is not envisaged that bedrock will be encountered, if bedrock is encountered, it is anticipated that it will not be crushed on site. Any excavated rock is expected to be removed off- site for appropriate reuse, recovery and / or disposal. If bedrock is to be crushed on- site, the appropriate mobile waste facility permit will be obtained from DLRCC.

Silt & Sludge
During the construction phase, silt and petrochemical interception should be carried out on runoff and pumped water from site works, where required. Sludge and silt will then be collected by a suitably licensed contractor and removed offsite.

Concrete Blocks, Bricks, Tiles & Ceramics
The majority of concrete blocks, bricks, tiles and ceramics generated as part of the construction works are expected to be clean, inert material and will be recycled, where possible.

Hard Plastic
As hard plastic is a highly recyclable material, much of the plastic generated will be primarily from material off-cuts. All recyclable plastic will be segregated and recycled, where possible.

Timber
Timber that is uncontaminated, i.e. free from paints, preservatives, glues etc., will be disposed of in a separate skip and recycled off-site.

Metal
Metals will be segregated where practical and stored in skips. Metal is highly recyclable and there are numerous companies that will accept these materials.

Plasterboard
There are currently a number of recycling services for plasterboard in Ireland. Plasterboard from the construction phases will be stored in a separate skip, pending collection for recycling. The site manager will ensure that oversupply of new plasterboard is carefully monitored to minimise waste.

Glass
Glass materials will be segregated for recycling, where possible.

Waste Electrical and Electronic Equipment (WEEE)
Any WEEE will be stored in dedicated covered cages/receptacles/pallets pending collection for recycling.

Other Recyclables
Where any other recyclable wastes such as cardboard and soft plastic are generated, these will be segregated at source into dedicated skips and removed off-site.

Non-Recyclable Waste
C&D waste which is not suitable for reuse or recovery, such as polystyrene, some plastics and some cardboards, will be placed in separate skips or other receptacles.

Prior to removal from site, the non-recyclable waste skip/receptacle will be examined by a member of the waste team (see Section 10.0) to determine if recyclable materials have been placed in there by mistake. If this is the case, efforts will be made to determine the cause of the waste not being segregated correctly and recyclable waste will be removed and placed into the appropriate receptacle.

Asbestos Containing Materials

If any asbestos or ACM found on site, they will be removed by a suitably competent contractor and disposed of as asbestos waste before the demolition works begin. All asbestos removal work or encapsulation work must be carried out in accordance with S.I. No. 589 of 2010 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010.

Other Hazardous Wastes

On-site storage of any hazardous wastes produced (i.e. contaminated soil if encountered and/or waste fuels) will be kept to a minimum, with removal off-site organised on a regular basis. Storage of all hazardous wastes on-site will be undertaken so as to minimise exposure to on-site personnel and the public and to also minimise potential for environmental impacts. Hazardous wastes will be recovered, wherever possible, and failing this, disposed of appropriately.

It should be noted that until a construction contractor is appointed it is not possible to provide information on the specific destinations of each construction waste stream. Prior to commencement of construction and removal of any construction waste offsite, details of the proposed destination of each waste stream will be provided to DLRCC by the project team.

7.4 Tracking and Documentation Procedures for Off-Site Waste

All waste will be documented prior to leaving the site. Waste will be weighed by the contractor, either by weighing mechanism on the truck or at the receiving facility. These waste records will be maintained on site by the nominated project Waste Manager (see Section 10.0).

All movement of waste and the use of waste contractors will be undertaken in accordance with the *Waste Management Acts 1996 - 2011*, *Waste Management (Collection Permit) Regulations 2007* as amended and *Waste Management (Facility Permit & Registration) Regulations 2007* and amended. This includes the requirement for all waste contractors to have a waste collection permit issued by the NWCPO. The nominated project waste manager (see Section 10.0) will maintain a copy of all waste collection permits on-site.

If the waste is being transported to another site, a copy of the Local Authority waste COR/permit or EPA Waste/IE Licence for that site will be provided to the nominated project waste manager (see Section 10.0). If the waste is being shipped abroad, a copy of the Transfrontier Shipping (TFS) notification document will be obtained from DCC (as the relevant authority on behalf of all local authorities in Ireland) and kept on-site along with details of the final destination (COR, permits, licences etc.). A receipt from the final destination of the material will be kept as part of the on-site waste management records.

All information will be entered in a waste management recording system to be maintained on site.

8.0 ESTIMATED COST OF WASTE MANAGEMENT

An outline of the costs associated with different aspects of waste management is provided below.

The total cost of C&D waste management will be measured and will take into account handling costs, storage costs, transportation costs, revenue from rebates and disposal costs.

8.1 Reuse

By reusing materials on site, there will be a reduction in the transport and recycle/recovery/disposal costs associated with the requirement for a waste contractor to take the material off-site.

Clean and inert soils, gravel, stones etc. which cannot be reused on site may be used as access roads or capping material for landfill sites etc. This material is often taken free of charge or a reduced fee for such purposes, reducing final waste disposal costs.

8.2 Recycling

Salvageable metals will earn a rebate which can be offset against the costs of collection and transportation of the skips.

Clean uncontaminated cardboard and certain hard plastics can also be recycled. Waste contractors will charge considerably less to take segregated wastes, such as recyclable waste, from a site than mixed waste.

Timber can be recycled as chipboard. Again, waste contractors will charge considerably less to take segregated wastes such as timber from a site than mixed waste.

8.3 Disposal

Landfill charges are currently at around €130 - €150 per tonne which includes a €75 per tonne landfill levy specified in the *Waste Management (Landfill Levy) Regulations 2015*. In addition to disposal costs, waste contractors will also charge a collection fee for skips.

Collection of segregated C&D waste usually costs less than municipal waste. Specific C&D waste contractors take the waste off-site to a licensed or permitted facility and, where possible, remove salvageable items from the waste stream before disposing of the remainder to landfill. Clean soil, rubble, etc. is also used as fill/capping material, wherever possible.

9.0 DEMOLITION PROCEDURES

There will be waste materials generated from the demolition and renovation of some of the existing buildings and hardstanding areas on site, as well as from the further excavation of the building foundations. Further details can be found in section 3.1 project description or in chapter 5 Description of the Proposed Project of the EIAR. The demolition areas are identified in the planning drawings submitted as part of this application. The following sequence of works should be followed during the demolition stage, however this may be update based on compliance conditions issued for this project:

<u>Check for Hazards</u>

Prior to commencing works, buildings and structures to be demolished will be checked for any likely hazards including asbestos, ACMs, electrical power lines or cables, gas reticulation systems, telecommunications, unsafe structures and fire / explosion hazards, e.g. combustible dust, chemical hazards, oil, fuels and contamination.

Removal of Components

All hazardous materials will be removed first. All components from within the buildings that can be salvaged will be removed next. This will primarily be comprised of metal; however, may also include timbers, doors, windows, wiring and metal ducting, etc.

Removal of Roofing

Steel roof supports, beams, etc., will be dismantled and taken away for recycling / salvage.

Excavation of Services, Demolition of Walls and Concrete

Services will be removed from the ground and the breakdown of walls will be carried out once all salvageable or reusable materials have been taken from the buildings. Finally, any existing foundations and hard standing areas will be excavated.

10.0 TRAINING PROVISIONS

A member of the construction team will be appointed as the project waste manager to ensure commitment, operational efficiency and accountability during the C&D phases of the project.

10.1 Resource Manager Training and Responsibilities

The nominated waste manager will be given responsibility and authority to select a waste team if required, i.e. members of the site crew that will aid them in the organisation, operation and recording of the waste management system implemented on site. The waste manager will have overall responsibility to oversee, record and provide feedback to the client on everyday waste management at the site. Authority will be given to the waste manager to delegate responsibility to sub-contractors, where necessary, and to coordinate with suppliers, service providers and sub-contractors to prioritise waste prevention and material salvage.

The waste manager will be trained in how to set up and maintain a record keeping system, how to perform an audit and how to establish targets for waste management on site. The waste manager will also be trained in the best methods for segregation and storage of recyclable materials, have information on the materials that can be reused on site and be knowledgeable in how to implement this C&D RWMP.

10.2 Site Crew Training

Training of site crew is the responsibility of the waste manager and, as such, a waste training program will be organised. A basic awareness course will be held for all site crew to outline the C&D RWMP and to detail the segregation of waste materials at source. This may be incorporated with other site training needs such as general site induction, health and safety awareness and manual handling.

This basic course will describe the materials to be segregated, the storage methods and the location of the Waste Storage Areas (WSAs). A sub-section on hazardous wastes will be incorporated into the training program and the particular dangers of each hazardous waste will be explained.

11.0 TRACKING AND TRACING / RECORD KEEPING

Records should be kept for all waste material which leaves the site, either for reuse on another site, recycling or disposal. A recording system will be put in place to record the waste arising’s on site.

A waste tracking log should be used to track each waste movement from the site. On exit from the site the waste collection vehicle driver should stop at the site office and sign out as a visitor and provide the security personnel or waste manager with a waste docket (or WTF for hazardous waste) for the waste load collected. At this time, the security personnel should complete and sign the Waste Tracking Register with the following information:

- Date
- Time
- Waste Contractor
- Company waste contractor appointed by e.g. Contractor or subcontractor name
- Collection Permit No.
- Vehicle Reg.
- Driver Name
- Docket No.
- Waste Type
- EWC/LoW

The waste vehicle will be checked by security personal or the RM to ensure it has the waste collection permit no. displayed and a copy of the waste collection permit in the vehicle before they are allowed to remove the waste from the site.

The waste transfer dockets will be transferred to the RM on a weekly basis and can be placed in the Waste Tracking Log file. This information will be forwarded onto the DCC Waste Regulation Unit when requested.

Each subcontractor that has engaged their own waste contractor will be required to maintain a similar waste tracking log with the waste dockets / WTF maintained on file and available for inspection on site by the main contractor as required. These subcontractor logs will be merged with the main waste log.

Waste receipts from the receiving waste facility will also be obtained by the site contractor(s) and retained. A copy of the Waste Collection Permits, CORs, Waste Facility Permits and Waste Licences will be maintained on site at all times and will be periodically reviewed by the RM. Subcontractors who have engaged their own waste contractors, should provide the main contractor with a copy of the waste collection permits and COR / permit / licence for the receiving waste facilities and maintain a copy on file, available for inspection on site as required.

12.0 OUTLINE WASTE AUDIT PROCEDURE

12.1 Responsibility for Waste Audit

The appointed waste manager will be responsible for conducting a waste audit at the site during the C&D phase of the development.

12.2 Review of Records and Identification of Corrective Actions

A review of all the records for the waste generated and transported off-site will be undertaken mid-way through the project. If waste movements are not accounted for, the reasons for this will be established in order to see if and why the record keeping system has not been maintained. The waste records will be compared with the established recovery/reuse/recycling targets for the site.

Each material type will be examined, in order to see where the largest percentage waste generation is occurring. The waste management methods for each material type will be reviewed in order to highlight how the targets can be achieved.

Waste management costs will also be reviewed.

Upon completion of the C&D phase, a final report will be prepared, summarising the outcomes of waste management processes adopted and the total recycling/reuse/recovery figures for the development.

13.0 CONSULTATION WITH RELEVANT BODIES

13.1 Local Authority

Once construction contractors have been appointed and prior to removal of any C&D waste materials offsite, details of the proposed destination of each waste stream will be provided to DLRCC.

DLRCC will also be consulted, as required, throughout the demolition, excavation and construction phases in order to ensure that all available waste reduction, reuse and recycling opportunities are identified and utilised and that compliant waste management practices are carried out.

13.2 Recycling/Salvage Companies

Companies that specialise in C&D waste management will be contacted to determine their suitability for engagement. Where a waste contractor is engaged, each company will be audited in order to ensure that relevant and up-to-date waste collection permits and facility COR/permits/licences are held. In addition, information regarding individual construction materials will be obtained, including the feasibility of recycling each material, the costs of recycling/reclamation and the means by which the wastes will be collected and transported off-site, and the recycling/reclamation process each material will undergo off site.

14.0 REFERENCES

1. Waste Management Act 1996 -2021 (No. 10 of 1996) as amended.
2. Litter Pollution Act 1997 (S.I. No. 12 of 1997) as amended
3. Eastern-Midlands Region Waste Management Plan 2015 – 2021 (2015).
4. Department of Environment and Local Government (DoELG) *Waste Management – Changing Our Ways, A Policy Statement* (1998).
5. Forum for the Construction Industry – *Recycling of Construction and Demolition Waste.*
6. Department of Communications, Climate Action and Environment (DCCAE), *Waste Action Plan for the Circular Economy - Ireland's National Waste Policy 2020-2025* (Sept 2020).
7. DCCAE, *Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less*' (2021)
8. Environmental Protection Agency (EPA) *'Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects' (2021)*
9. Department of Environment, Heritage and Local Government, *Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects* (2006).
10. FÁS and the Construction Industry Federation (CIF), *Construction and Demolition Waste Management – a handbook for Contractors and Site Managers* (2002).
11. Dún Laoghaire–Rathdown County Council (DLRCC), Dún Laoghaire–Rathdown County Council Development Plan 2016-2022 (2016)
12. DLRCC, Draft Dún Laoghaire–Rathdown County Council Development Plan 2022 - 2028 (2021)
13. Planning and Development Act 2000 (S.I. No. 30 of 2000) as amended
14. DLRCC, Guidance Notes for Environmental Management of Construction Projects (2020)
15. EPA, *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous* (2015)
16. Council Decision 2003/33/EC, establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC.
17. Environmental Protection Agency (EPA), *National Waste Database Reports 1998 – 2019*.
18. EPA and Galway-Mayo Institute of Technology (GMIT), *EPA Research Report 146 – A Review of Design and Construction Waste Management Practices in Selected Case Studies – Lessons Learned* (2015).

OPERATIONAL WASTE MANAGEMENT PLAN FOR A PROPOSED MIXED-USE DEVELOPMENT

ON LANDS AT THE CENTRAL MENTAL HOSPITAL, DUNDRUM ROAD, DUNDRUM, DUBLIN 14.

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CB/21/12152WMR02

Date of Issue

22 March 2022

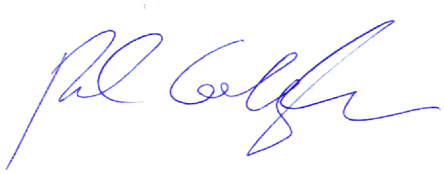
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Document History

Document Reference		Original Issue Date	
CB/21/12152WMR02		22 March 2022	
Revision Level	Revision Date	Description	Sections Affected

Record of Approval

Details	Written by	Approved by
Signature		
Name	Chonaill Bradley	Fergal Callaghan
Title	Principal Environmental Consultant	Director
Date	22 March 2022	22 March 2022

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1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Operational Waste Management Plan (OWMP) on behalf of The Land Development Agency. The proposal is a mixed-use scheme, Strategic Housing Development with a total application site area of c.9.56 ha, on lands at the Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14. The proposed development will consist of 977 no, residential units along with nonresidential units including retail, café, medical, childcare and community center units.

This OWMP has been prepared to ensure that the management of waste during the operational phase of the proposed development is undertaken in accordance with current legal and industry standards including, the *Waste Management Act 1996 – 2011* as amended and associated Regulations [1], *Protection of the Environment Act 2003* as amended [2], *Litter Pollution Act 2003* as amended [3], the *'Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021'* [4], *The Dún Laoghaire Rathdown County Council (Segregation, Storage and Presentation of Household and Commercial) Bye-Laws 2019* [5] *and the Guidance Notes for Waste Management Residential and Commercial Developments (2020)* [6]. In particular, this OWMP aims to provide a robust strategy for storing, handling, collection and transport of the wastes generated at site.

In addition, the following guidelines were consulted for healthcare specific waste management practice:

- Health Service Executive (HSE), *Waste Policy* (2016) [7],
- HSE, *Waste Management Awareness Handbook* (2011) [8];
- HSE, and Department of Health and Children (DOHC), *Healthcare Risk Waste Management: Segregation, Packaging and Storage Guidelines for Healthcare Risk Waste, 4th Edition* (2010) [9]; and
- Environmental Protection Agency (EPA) Green Healthcare, best practice guides for the reduction and segregation of hospital waste [10].

This OWMP aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible. The OWMP also seeks to provide guidance on the appropriate collection and transport of waste to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil or water resources). The plan estimates the type and quantity of waste to be generated from the proposed development during the operational phase and provides a strategy for managing the different waste streams.

At present, there are no specific guidelines in Ireland for the preparation of OWMPs. Therefore, in preparing this document, consideration has been given to the requirements of national and regional waste policy, legislation and other guidelines.

2.0 OVERVIEW OF WASTE MANAGEMENT IN IRELAND

2.1 National Level

The Government issued a policy statement in September 1998 titled as *'Changing Our Ways'* [11] which identified objectives for the prevention, minimisation, reuse, recycling, recovery and disposal of waste in Ireland. A heavy emphasis was placed on reducing reliance on landfill and finding alternative methods for managing waste. Amongst other things, Changing Our Ways stated a target of at least 35% recycling of municipal (i.e. household, commercial and non-process industrial) waste.

A further policy document *'Preventing and Recycling Waste – Delivering Change'* was published in 2002 [12]. This document proposed a number of programmes to increase

recycling of waste and allow diversion from landfill. The need for waste minimisation at source was considered a priority.

This view was also supported by a review of sustainable development policy in Ireland and achievements to date, which was conducted in 2002, entitled *'Making Irelands Development Sustainable – Review, Assessment and Future Action'* [13]. This document also stressed the need to break the link between economic growth and waste generation, again through waste minimisation and reuse of discarded material.

In order to establish the progress of the Government policy document *Changing Our Ways*, a review document was published in April 2004 entitled *'Taking Stock and Moving Forward'* [14]. Covering the period 1998 – 2003, the aim of this document was to assess progress to date with regard to waste management in Ireland, to consider developments since the policy framework and the local authority waste management plans were put in place, and to identify measures that could be undertaken to further support progress towards the objectives outlined in *Changing Our Ways*.

In particular, *Taking Stock and Moving Forward* noted a significant increase in the amount of waste being brought to local authority landfills. The report noted that one of the significant challenges in the coming years was the extension of the dry recyclable collection services.

In September 2020, the Irish Government published a new policy document outlining a new action plan for Ireland to cover the period of 2020-2025. This plan *'A Waste Action Plan for a Circular Economy'* [15] (WAPCE), was prepared in response to the 'European Green Deal' which sets a roadmap for a transition to a new economy, where climate and environmental challenges are turned into opportunities, replacing the previous national waste management plan *"A Resource Opportunity"* (2012).

The WAPCE sets the direction for waste planning and management in Ireland up to 2025. This reorientates policy from a focus on managing waste to a much greater focus on creating circular patterns of production and consumption. Other policy statements of a number of public bodies already acknowledge the circular economy as a national policy priority.

The policy document contains over 200 measures across various waste areas including circular economy, municipal waste, consumer protection and citizen engagement, plastics and packaging, construction and demolition, textiles, green public procurement and waste enforcement.

One of the first actions to be taken was the development of the Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less' (2021) [16] to set a course for Ireland to transition across all sectors and at all levels of Government toward circularity and was issued in December 2021. It is anticipated that the Strategy will be updated in full every 18 months to 2 years.

Since 1998, the Environmental Protection Agency (EPA) has produced periodic *'National Waste (Database) Reports'* [17] detailing, among other things, estimates for household and commercial (municipal) waste generation in Ireland and the level of recycling, recovery and disposal of these materials. The *2019 National Waste Statistics*, which is the most recent study published, along with the national waste statistics web resource (November 2021) reported the following key statistics for 2019:

- **Generated –** Ireland produced 3,085,652 t of municipal waste in 2019. This is almost a 6% increase since 2018. This means that the average person living in Ireland generated 628 kg of municipal waste in 2019.

- **Managed –** Waste collected and treated by the waste industry. In 2019, a total of 3,036,991 t of municipal waste was managed and treated.
- **Unmanaged –**Waste that is not collected or brought to a waste facility and is, therefore, likely to cause pollution in the environment because it is burned, buried or dumped. The EPA estimates that 48,660 t was unmanaged in 2019.
- **Recovered –** The amount of waste recycled, used as a fuel in incinerators, or used to cover landfilled waste. In 2019, around 83% of municipal waste was recovered – a decrease from 84% in 2018.
- **Recycled –** The waste broken down and used to make new items. Recycling also includes the breakdown of food and garden waste to make compost. The recycling rate in 2019 was 37%, which is down from 38% in 2018.
- **Disposed –** Less than a sixth (15%) of municipal waste was landfilled in 2019. This is an increase from 14% in 2018.

2.2 Regional Level

The proposed development is located in the Local Authority area of Dún Laoghaire Rathdown County Council (DLRCC).

The *EMR Waste Management Plan 2015 – 2021* is the regional waste management plan for the DLRCC area which was published in May 2015.

The regional plan sets out the following strategic targets for waste management in the region that are relevant to the proposed development:

- Achieve a recycling rate of 50% of managed municipal waste by 2020; and
- Reduce to 0% the direct disposal of unprocessed residual municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous recovery practices.

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Leinster Region, charges are approximately €130 – €150 per tonne of waste which includes a €75 per tonne landfill levy introduced under the *Waste Management (Landfill Levy) (Amendment) Regulations 2013.*

The *Dún Laoghaire-Rathdown County Development Plan 2016 – 2022* [18] sets out a number of policies for the Dún Laoghaire-Rathdown area in line with the objectives of the waste management plan.

Waste policies with a particular relevance to the proposed development are as follows:

Policy EI12: Waste Management Strategy
It is Council policy to conform to the European Union and National waste management hierarchy as follows:
- *waste prevention*
- *minimisation*
- *re-use*
- *waste recycling*
- *energy recovery and*
- *disposal*

subject to economic and technical feasibility and Environmental Assessment.

Policy EI13: Waste Plans
It is Council policy to publish plans for the collection, treatment, handling and disposal of waste in accordance with the provisions of the Waste Management Act 1996 (as amended) and Protection of the Environment Act 2003 (as amended).

Policy EI14: Private Waste Companies
It is Council policy to ensure that all waste that is disposed of by private waste companies is done so in compliance with the requirements of the Environmental Protection Agency and the Waste Management Legislation and in accordance with the Planning Code.

Policy EI15: Waste Prevention and Reduction
It is Council policy to promote the prevention and reduction of waste and to co-operate with industry and other agencies in viable schemes to achieve this.

Policy EI16: Waste Re-use and Re-cycling
It is Council policy to promote the increased re-use and re-cycling of materials from all waste streams. The Council will co-operate with other agencies in viable schemes for the extraction of useful materials from refuse for re-use or re-cycling and will adopt the National targets as stated in the 'Dublin Regional Waste Management Plan 2005-2010'. (Note: the EMR Waste Management Plan 2015 - 2021 was published in 2015. It is assumed this objective is relevant to the EMR Waste Management Plan and not the Dublin Regional Waste Management Plan which is no longer valid).

The Draft *Dún Laoghaire-Rathdown County Development Plan 2022 – 2028* [19] sets out a number of policies for the Dún Laoghaire-Rathdown area in line with the objectives of the regional waste management plan.

Proposed waste policies with a particular relevance to the proposed development are as follows:

Policy Objective EI12: Resource Management

It is a Policy Objective to implement the Eastern-Midlands Region Waste Management Plan 2015-2021 and subsequent plans, in supporting the transition from a waste management economy towards a circular economy, to enhance employment and increase the value recovery and recirculation of resources. Underpinning this objective is the requirement to conform to the European Union and National Waste Management Hierarchy of the most favoured options for waste as illustrated below subject to economic and technical feasibility and Environmental Assessment.

Policy Objective EI13: Waste Management Infrastructure, Prevention, Reduction, Reuse and Recycling

- To support the principles of the circular economy, good waste management and the implementation of best international practice in relation to waste management in order for the County and the Region to become self-sufficient in terms of resource and waste management and to provide a waste management infrastructure that supports this objective.

- To provide for civic amenity facilities and bring centres as part of an integrated waste collection system in accessible locations throughout the County and promote the importance of kerbside source segregated collection of household and commercial waste as the best method to ensure the quality of waste presented for recycling is preserved.

- To ensure any waste amenity facilities adhere to the Waste Regional Offices Waste Management Infrastructure siting guidelines.

- To develop a County wide network of multi material recycling centres, bring centres and a re-use centre and to require the provision of adequately-sized

recycling facilities in new commercial and large-scale residential developments, where appropriate.

- To require the inclusion of such centres in all large retail developments to maximise access by the public. To ensure new developments are designed and constructed in line with the Council's Guidelines for Waste Storage Facilities

Policy Objective EI14: Hazardous Waste

It is a Policy Objective to adhere to the recommendations of the 'National Hazardous Waste Management Plan 2014-2020' and any subsequent plan, and to co-operate with other agencies, to plan, organise, authorise and supervise the disposal of hazardous waste streams, including hazardous waste identified during construction and demolition projects.

2.3 Legislative Requirements

The primary legislative instruments that govern waste management in Ireland and applicable to the project are:

- Waste Management Act 1996 - 2021 as amended.
- Environmental Protection Act 1992 (S.I. No. 7 of 1992) as amended;
- Litter Pollution Act 1997 (Act No. 12 of 1997) as amended and
- Planning and Development Act 2000 (S.I. No. 30 of 2000) as amended [20]

These Acts and subordinate Regulations enable the transposition of relevant European Union Policy and Directives into Irish law.

One of the guiding principles of European waste legislation, which has in turn been incorporated into the *Waste Management Act 1996 - 2011* and subsequent Irish legislation, is the principle of *"Duty of Care"*. This implies that the waste producer is responsible for waste from the time it is generated through until its legal disposal (including its method of disposal.) As it is not practical in most cases for the waste producer to physically transfer all waste from where it is produced to the final disposal area, waste contractors will be employed to physically transport waste to the final waste disposal site.

It is therefore imperative that the residents, tenants and the proposed facility management company undertake on-site management of waste in accordance with all legal requirements and employ suitably permitted/licenced contractors to undertake off-site management of their waste in accordance with all legal requirements. This includes the requirement that a waste contactor handle, transport and reuse/recover/recycle/dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

A collection permit to transport waste must be held by each waste contractor which is issued by the National Waste Collection Permit Office (NWCPO). Waste receiving facilities must also be appropriately permitted or licensed. Operators of such facilities cannot receive any waste, unless in possession of a Certificate of Registration (COR) or waste permit granted by the relevant Local Authority under the *Waste Management (Facility Permit & Registration) Regulations 2007* as amended or a waste or IE (Industrial Emissions) licence granted by the EPA. The COR/permit/licence held will specify the type and quantity of waste able to be received, stored, sorted, recycled, recovered and/or disposed of at the specified site.

2.3.1 Dún Laoghaire-Rathdown County Council Waste Bye-Laws

*The DLRCC "*Dún Laoghaire-Rathdown County Council *(Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws (2019)"* were bought into force on the 1st of February 2020. These Bye-laws repeal the previous DLRCC waste Bye-laws. The Bye-laws set a number of enforceable requirements on waste holders with regard to storage, separation and presentation of waste within the DLRCC functional area. Key requirements under these Bye-laws of relevance to the proposed development include the following:

- Kerbside waste presented for collection shall not be presented for collection earlier than 6.00 pm on the day immediately preceding the designated waste collection day;
- All containers used for the presentation of kerbside waste and any uncollected waste shall be removed from any roadway, footway, footpath or any other public place no later than 10:00am on the day following the designated waste collection day, unless an alternative arrangement has been approved in accordance with bye-law 4;
- Documentation, including receipts, is obtained and retained for a period of no less than one year to provide proof that any waste removed from the premises has been managed in a manner that conforms to these bye-laws, to the Waste Management Act and, where such legislation is applicable to that person, to the European Union (Household Food Waste and Bio-Waste) Regulations 2015; and
- Adequate access and egress onto and from the premises by waste collection vehicles is maintained.

Provisions affecting Multi-user Buildings, Apartment Blocks, etc.

A management company, or another person if there is no such company, who exercises control and supervision of residential and/or commercial activities in multi-unit developments, mixed-use developments, flats or apartment blocks, combined living/working spaces or other similar complexes shall ensure that:

a. *separate receptacles of adequate size and number are provided for the proper segregation, storage and collection of recyclable kerbside waste, residual kerbside waste and food waste,*
b. *the receptacles referred to in paragraph (a) are located both within any individual apartment and at the place where waste is stored prior to its collection,*
c. *any place where waste is to be stored prior to collection is secure, accessible at all times by tenants and other occupiers and is not accessible by any other person other than an authorised waste collector,*
d. *written information is provided to each tenant or other occupier about the arrangements for waste separation, segregation, storage and presentation prior to collection,*
e. *an authorised waste collector is engaged to service the receptacles referred to in this section of these bye-laws, with documentary evidence, such as receipts, statements or other proof of payment, demonstrating the existence of this engagement being retained for a period of no less than two years. Such evidence shall be presented to an authorised person within a time specified in a written request from either that person or from another authorised person employed by Dún Laoghaire-Rathdown County Council,*
f. *receptacles for kerbside waste are presented for collection on the designated waste collection day,*
g. *adequate access and egress onto and from the premises by waste collection vehicles is maintained.*

The full text of the Waste Bye-Laws is available from the DLRCC website.

2.4 Health Service Executive Waste Policy

The Health Service Executive (HSE) has stipulated within its *Waste Policy* that Waste Management Plans (WMPs) for healthcare facilities should include:

- Strategies to minimise the quantities of healthcare waste generated.
- Methods of segregating, packaging, labelling, storing, and transporting each waste type, both on-site and off-site.

These guidelines will be used to complete this OWMP.

2.5 Local Authority Guidelines

DLRCC's Waste Management Division have issued *Guidance Notes for Waste Management in Residential and Commercial Developments* (2020) which provide good practice guidance for the storage and collection of waste for new build high density developments. The guidelines include a form which is designed to be completed by (or on behalf of) the applicant for new high-density developments. The objective of the guidelines is to allow developers to demonstrate to local planning and waste management authorities that they have considered how the design and the operation of waste management services will enable the occupiers and managing agents to effectively manage their wastes arisings.

The ultimate goal of the guidelines is that the implemented waste strategy will achieve a 70% reuse and recovery target in accordance with the European Commission's proposal to introduce 70% reuse and recycling targets for municipal waste by 2030 and while also providing sufficient flexibility to support future targets and legislative requirements.

This OWMP has been prepared to demonstrate exactly that and aims to do that in a comprehensive manner.

The guidelines and form are available on the DLRCC website.

2.6 Regional Waste Management Service Providers and Facilities

Various contractors offer waste collection services for the in the DLRCC region. Details of waste collection permits (granted, pending and withdrawn) for the region are available from the NWCPO.

As outlined in the regional waste management plan, there is a decreasing number of landfills available in the region. Only three municipal solid waste landfills remain operational and are all operated by the private sector. There are a number of other licensed and permitted facilities in operation in the region including waste transfer stations, hazardous waste facilities and integrated waste management facilities. There are two existing thermal treatment facilities, one in Duleek, Co. Meath and a second facility in Poolbeg in Dublin.

The DCC Gulistan Terrace Bring Centre (Recycling Centre) is located approximately 4km to the north, which can be utilised by the residents of the development for other household waste streams. While the closest bring bank is located on Sweetmount Avenue Dundrum, c. 1.3km to the south of the proposed development.

A copy of all CORs and waste permits issued by the Local Authorities are available from the NWCPO website and all waste/IE licenses issued are available from the EPA.

3.0 DESCRIPTION OF THE PROJECT

3.1 Location, Size and Scale of the Development

The Land Development Agency intend to apply to An Bord Pleanála (the Board) for permission for a Strategic Housing Development with a total application site area of c.9.56 ha, on lands at the Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14.

The development will consist of the demolition of existing structures (3,497 sq m), including:

- Former swimming pool / sports hall and admissions unit (2,750 sq m);
- Two storey redbrick building (305 sq m);
- Temporary structures including portacabins (438 sq m)
- Removal of security fence at Dundrum Road entrance;
- Demolition of element of Gatelodge (4 sq m)

The development will also consist of alterations and partial demolition of the perimeter wall, including:

- Removal of section of perimeter wall adjacent to Rosemount Green (south);
- Formation of a new opening in perimeter wall at Annaville Grove to provide a pedestrian and cyclist access and associated gate;
- Removal of section of perimeter wall at the existing Dundrum Road access;
- Alterations and removal of sections of wall adjacent to Dundrum Road, including the provision of a new vehicular, cyclist and pedestrian access;
- Alterations and removal of section of perimeter wall adjacent to Mulvey Park to provide a pedestrian and cyclist access and associated gate.

The development with a total gross floor area of c. 105,866 sq m (c. 105,944 sq m including retained existing buildings), will consist of 977 no. residential units comprising:

- 940 no. apartments (consisting of 53 no. studio units; 431 no. one bedroom units; 24 no. two bedroom (3 person) units; 314 no. two bedroom (4 person) units; and 118 no. 3 bedroom units) arranged in 9 blocks (Blocks 02-10) ranging between 2 and 6 storeys in height, together with private and communal amenity open space provision and ancillary residential facilities;
- 17 no. duplex apartments (consisting of 3 no. 2 bedroom units and 14 no. 3 bedrooms units located in Block 02, 08 and 09);
- 20 no. two and three storey houses (consisting of 7 no. three bedroom units and 13 no. 4 bedrooms units) and private rear gardens;

The development will also consist of 3,889 sq m of non-residential uses, comprising:

- Change of use and renovation of existing Gate Lodge building to provide a café unit (78 sq m);
- 7 no. retail units (1,419 sq m);
- 1 no. medical unit (245 sq m)
- A new childcare facility (463 sq m);
- A new community centre facility, including a multi-purpose hall, changing rooms, meeting rooms, storage and associated facilities (1,684 sq m);

The development will also consist of the provision of c.3.01 hectares (c. 30,146 sq m) of public open space and related play areas; hard and soft landscaping including internal roads, pathways and boundary treatments, car parking (547 no. spaces in total, including car sharing and accessible spaces); vehicle charging points; bicycle

parking (long and short stay spaces including secure stands); storage areas; 8 no. ESB substations, piped infrastructural services and connections; plant; waste management provision; SuDS measures; sustainability measures (including green roofs and solar panels); signage; public lighting; and all site development and excavation works above and below ground.

3.2 Typical Waste Categories

The typical non-hazardous and hazardous wastes that will be generated at the proposed development will include the following:

- Dry Mixed Recyclables (DMR) - includes wastepaper (including newspapers, magazines, brochures, catalogues, leaflets), cardboard and plastic packaging, metal cans, plastic bottles, aluminium cans, tins and Tetra Pak cartons;
- Organic waste – food waste and green waste generated from plants/flowers;
- Glass; and
- Mixed Non-Recyclable (MNR)/General Waste.

In addition to the typical waste materials that will be generated at the development on a daily basis, there will be some additional waste types generated in small quantities which will need to be managed separately including:

- Green/garden waste may be generated from internal plants and external landscaping;
- Batteries (both hazardous and non-hazardous);
- Waste electrical and electronic equipment (WEEE) (both hazardous and non-hazardous);
- Printer cartridges/toners;
- Chemicals (paints, adhesives, resins, detergents, etc.);
- Light bulbs;
- Textiles (rags);
- Waste cooking oil (if any generated by the residents or tenants);
- Furniture (and from time to time other bulky wastes); and
- Abandoned bicycles.

Wastes should be segregated into the above waste types to ensure compliance with waste legislation and guidance while maximising the re-use, recycling and recovery of waste with diversion from landfill wherever possible.

3.3 Typical Waste Categories and Waste Minimisation/Segregation

The proposed development will give rise to a wide variety of waste streams during operations. Healthcare waste is defined in the HSE and DOHC *Healthcare Risk Waste Management* publication as *"solid or liquid waste arising from healthcare"*. Waste materials generated will fall into two main categories, namely healthcare non-risk waste (i.e. non-clinical healthcare waste) and HCRW (hazardous) as illustrated in Figure 3.1. Hazardous waste has been further subdivided in this plan into non-clinical hazardous waste and clinical/risk waste.

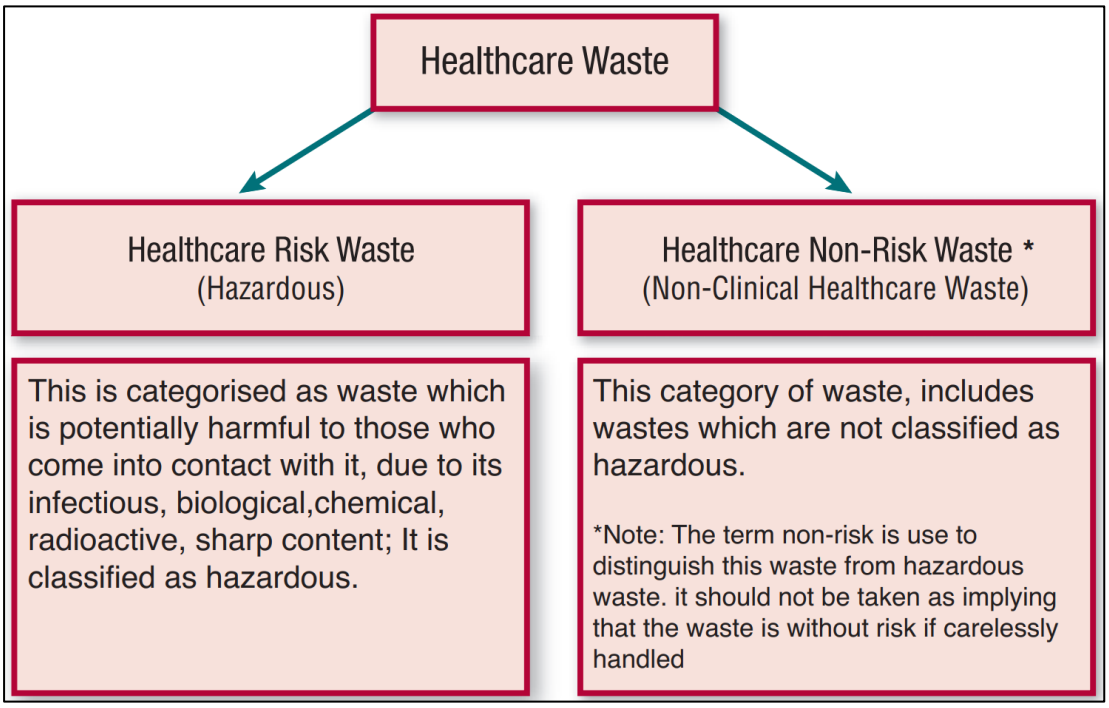


Figure 3.1 Healthcare Waste Categories (Source: HSE, *Waste Management Awareness Handbook* (2010)

3.3.1 Healthcare Non-Risk Waste

The typical non-risk/non clinical non-hazardous waste streams that will be generated at the proposed development will include the following:

- Dry Mixed Recyclables (DMR) – includes cardboard, non-confidential paper, newspaper, leaflets plastic packaging and bottles, aluminium cans, tins and Tetra Pak cartons;
- Confidential paper;
- Mixed Non-Recyclable /General Waste (MNR);
- Organic (food/catering) waste; and
- Glass.

In addition to the typical non-risk/non-clinical non-hazardous waste materials that will be generated at the development on a daily basis, there will be some additional waste types generated less frequently / in smaller quantities which will need to be managed separately including:

- Green / garden waste may be generated from external landscaping;
- Batteries (non-hazardous) *note: hazardous batteries may also be generated which are referred to in Section 3.2.2*;
- Waste electrical and electronic equipment (WEEE) including computers, printers and other ICT equipment (non-hazardous) *note: WEEE containing hazardous components may also be generated which are referred to in Section 3.2.2*;
- Metals, timber and mixed C&D waste generated from operational maintenance activities;
- Polystyrene;
- Textiles;
- Waste cooking oil (if any generated by the commercial tenant); and
- Furniture (and, from time to time, other bulky wastes).

Wastes should be segregated into the above waste types to ensure compliance with waste legislation and guidance while maximising the re-use, recycling and recovery of waste with diversion from landfill wherever possible.

3.3.1.1 Reducing and Segregating Healthcare Non-Risk Waste

The following steps have been outlined to contribute towards the minimisation and segregation within this waste stream:

- Review your current recycling policy and system
- Make it clear what can be placed in the recycling bags
- Ensure recycling bags are placed in the right location
- Make the recycling bins easy to use
- Use different colour bins for each type of waste
- Prevent contamination with liquid and food

For full details on how to minimise and segregation healthcare non-risk waste, please see *Best Practice Guide Maximise Recycling and Reduce Landfill Waste* [9].

3.3.2 Non-Clinical Hazardous Waste

The typical non-clinical hazardous waste streams that will be generated will include the following:

- Printer/toner cartridges;
- Batteries (hazardous) *note: non-hazardous batteries may also be generated which are referred to in Section 3.2.1*;
- Waste electrical and electronic equipment (WEEE) including computers, printers and other ICT equipment (containing hazardous components) *note: WEEE not containing hazardous components may also be generated which are referred to in Section 3.2.1*;
- Cleaning chemicals (solvents, pesticides, paints, adhesives, resins, detergents, etc.); and
- Fluorescent bulb tubes and other mercury containing waste.

3.3.3 Healthcare Risk Waste (Hazardous)

HCRW will be generated from any clinical treatment and consultation rooms. Figure 3.2 over shows the classification and colour coding of HCRW as presented in the HSE guidance document.

The HCRW generated at the medical use/ healthcare facility will comprise waste disposed of in yellow bags (such as dressings, swabs, bandages, gloves etc.) and yellow sharps buckets (for waste such as surgical kits, needles, syringes, razors, stitch cutters etc.).



Figure 3.2 Segregation of HCRW (Source: HSE and DOHC, *Healthcare Risk Waste Management* (2010) and HSE, *Waste Management Awareness Handbook* (2011))

3.3.3.1 Reducing Healthcare Risk Waste

The following steps can be taken to reduce the quantity of non-risk waste incorrectly placed in the HCRW bins:

- Review your facility's HCRW classification policy.
- Ensure staff know what is and is not HCRW
- Remove HCRW bins from public access areas e.g. multi-bed wards

On average, 20% of risk waste generated in healthcare facilities is generated in operating theatres. To reduce the amount of risk waste generated these steps have been outlined:

- Prevent the generation of waste – by reviewing what materials and instruments are often not used in a surgical kit during specific treatments, etc.
- Review the HCRW classification policy
- Increase the segregation of recyclables and minimise the non-risk waste content in the healthcare risk waste

For full detail on methods to minimise HCRW please see *Best Practice Guide Healthcare Risk Waste Reduction* and *Best Practice Guide Healthcare Risk Waste Reduction in the Theatre*.

3.4 European Waste Codes

In 1994, the *European Waste Catalogue* [22] and *Hazardous Waste List* [23] were published by the European Commission. In 2002, the EPA published a document titled the *European Waste Catalogue and Hazardous Waste List* [24], which was a condensed version of the original two documents and their subsequent amendments. This document has recently been replaced by the EPA '*Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous'* [25] which became valid from the 1st June 2015. This waste classification system applies across the EU and is the basis for all national and international waste reporting, such as those associated with waste collection permits, CORs, permits and licences and EPA National Waste Database.

Under the classification system, different types of wastes are fully defined by a code. The List of Waste (LoW) code (also referred to as European Waste Code or EWC) for typical waste materials expected to be generated during the operation of the proposed development are provided in Table 3.1 below.

Table 3.1 Typical Waste Types Generated and LoW Codes

Waste Material	LoW/EWC Code
Paper and Cardboard	20 01 01
Plastics	20 01 39
Metals	20 01 40
Mixed Non-Recyclable Waste	20 03 01
Glass	20 01 02
Biodegradable Kitchen Waste	20 01 08
Oils and Fats	20 01 25
Textiles	20 01 11
Batteries and Accumulators*	20 01 33* - 34
Printer Toner/Cartridges*	20 01 27* - 28
Green Waste	20 02 01
WEEE*	20 01 35*-36
Chemicals (solvents, pesticides, paints & adhesives, detergents, etc) *	20 01 13*/19*/27*/28/29*30
Bulky Wastes	20 03 07

** Individual waste type may contain hazardous materials*

4.0 ESTIMATED WASTE ARISINGS

A waste generation model (WGM) developed by AWN, has been used to predict waste types, weights and volumes arising from operations within the proposed development. The WGM incorporates building area and use and combines these with other data including Irish and US EPA waste generation rates.

The estimated quantum/volume of waste that will be generated from the residential units has been determined based on the predicted occupancy of the units. While the floor area uses m^2 has been used to estimate the waste that will be generated by the commercial, community and creche units (All classed as commercial) in the development.

Waste from residential amenities has been calculated within the residential waste figures and waste will be stored within the closet residential waste store.

The estimated waste generation for the development for the main waste types is presented in Table 4.1, 4.2, 4.3 and 4.4.

Waste type	Waste Volume (m^3/week)			
	Residential Duplex 2 - Bed (Individual)	Residential House/Duplex 3 - Bed (Individual)	Residential House 4 - Bed (Individual)	Residential Block 2 (Combined)
Organic Waste	0.02	0.02	0.02	1.72
DMR	0.12	0.14	0.18	11.80
Glass	<0.00	<0.00	<0.00	0.33
MNR	0.06	0.07	0.09	6.86
Total	**0.20**	**0.23**	**0.29**	**20.71**

Table 4.1 Estimated waste generation for the proposed development for the main waste types

Waste type	Waste Volume (m^3/week)			
	Residential Block 3 (Combined)	Residential Block 4 (Combined)	Residential Block 5 (Combined)	Residential Block 6 (Combined)
Organic Waste	2.34	1.51	1.64	0.61
DMR	16.55	10.69	11.61	4.30
Glass	0.45	0.29	0.32	0.12
MNR	8.70	5.62	6.11	2.26
Total	**28.04**	**18.11**	**19.67**	**7.28**

Table 4.2 Estimated waste generation for the proposed development for the main waste types

Waste type	Waste Volume (m^3/week)			
	Residential Block 7 (Combined)	Residential Duplex Block 8 (Combined)	Residential Duplex Block 9 (Combined)	Residential Block 10 (Combined)
Organic Waste	3.20	0.28	0.16	2.36
DMR	22.65	1.96	1.15	16.71
Glass	0.62	0.05	0.03	0.46
MNR	11.91	1.03	0.60	6.41
Total	**38.38**	**3.31**	**1.94**	**25.93**

Table 4.3 Estimated waste generation for the proposed development for the main waste types

Waste type	Waste Volume (m^3/week)			
	Childcare Unit (Individual)	Medical Unit (Individual)	Community Centre Facility (Individual)	Other Commercial Units (Combined)
Organic Waste	0.05	0.03	0.30	0.41
DMR	1.71	0.57	1.88	7.99
Glass	0.01	<0.00	0.20	0.22
MNR	0.94	0.25	2.30	3.33
Confidential Paper	-	0.23	-	-
Medical Waste	-	0.63	-	-
Total	**2.70**	**1.71**	**4.78**	**11.95**

Table 4.4 Estimated waste generation for the proposed development for the main waste types

The DLR Pre-Planning Waste Management Form recommends calculating residential waste using Section 4.7 of *BS5906:2005 Waste Management in Buildings – Code of Practice* [26]*.* The predicted total waste generated from the residential units based on the Code of Practice is c. 130.96m^3 per week for the residential units. Whereas the AWN waste generation model estimates c. 170.80m^3 per week from the residential units. AWN's modelling methodology is based on data from recent published data and data from numerous other similar developments in Ireland and based on AWN's experience it is a more representative estimate of the likely waste arisings from the development.

5.0 WASTE STORAGE AND COLLECTION

This section provides information on how waste generated within the development will be stored and how the waste will be collected from the development. This has been prepared with due consideration of the proposed site layout as well as best practice standards, local and national waste management requirements including those of DLRCC. In particular, consideration has been given to the following documents:

- BS 5906:2005 Waste Management in Buildings – Code of Practice;
- DLRCC Guidance Notes for Waste Management in Large Residential and Commercial Developments (2020);

- DLRCC, Segregation, Storage and Presentation of Household and Commercial Waste) Bye-laws (2019);
- EMR Waste Management Plan 2015 – 2021; and
- Department of Housing, Local Government and Heritage (DoHLGH), Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (Section 4.8-4.9) (2020) [27]
- DoHLGH, Design Manual for Urban Roads and Streets (2019) [28]

Waste Storage Areas

Houses units

Houses will have their own individual WSAs allocated at the rear of their home where external access to the rear yard is possible. When external access to the rear of the property is unavailable, bins will be stored at the front of the unit, shielded from view of the road.

Unit Blocks 2-7 & 10

15 no. shared communal Waste Storage Areas (WSAs) have been allocated within the development design for the residential apartment blocks. All WSAs have been strategically located on the ground floor level, in close proximity to cores.

Duplex/Unit Blocks 8 & 9

Duplex units will have their own individual WSAs allocated at the rear of their buildings where external access to the rear yard is possible. When external access to the rear of the property is unavailable, bins will be stored at the front of the unit, shielded from view of the road.

Childcare Unit

The Childcare unit will have their own individual WSAs allocated on ground floor level in Block 10, adjacent to their unit

Medical Units

1 no. WSAs have been allocated for use by the medical unit. The medical unit will have their own individual WSA for the storage of general and medical waste at ground floor level in Block 2

Commercial Units Block 3 & 8

2 no. WSAs have been allocated for use by the commercial units in their respective blocks. These WSAs have been allocated on ground floor level in close proximity to the commercial units within Block 3 & 8.

Community

1 no. shared WSAs have been allocated in the development design for use by the Community unit in Block 6.

Café Gatehouse Unit

The café will be required to allocate space within their own unit for the storage of segregated waste.

Facilities management will supply all tenants with a document that shall clearly state the methods of source waste segregation, storage, reuse and recycling initiatives that shall apply within the development.

The waste receptacles from the shared WSAs will be collected by facilities management, immediately prior to collection and brought to where the bins will be staged temporarily awaiting collection. The staging areas are such that it will not obstruct traffic or pedestrians (allowing a footway path of at least 1.8m, the space needed for two wheelchairs to pass each other) as is recommended in the *Design Manual for Urban Roads and Streets* (2019).

Using the estimated waste generation volumes in Table 4.1, the waste receptacle requirements for MNR, DMR, organic waste and glass have been established for the residential WSA. These are presented in Table 5.1.

Table 5.1 Waste storage requirements for the proposed development

Area/Use	Bins Required					Equipment
	MNR*	DMR**	Organic	Glass	Bales	
Houses / Duplex (Individual)	1 x 240L	1 x 240L	1 x 120L	Bottle Bank	-	-
Residential Apartment Block 2 (Shared)	7 x 1100L	11 x 1100L	8 x 240L	2 x 240L	-	-
Residential Apartment Block 3 (Shared)	8 x 1100L	15 x 1100L	10 x 240L	2 x 240L	-	-
Residential Apartment Block 4 (Shared)	6 x 1100L	10 x 1100L	7x 240L	2 x 240L	-	-
Residential Apartment Block 5 (Shared)	6 x 1100L	11 x 1100L	7 x 240L	2 x 240L	-	-
Residential Apartment Block 6 (Shared)	2 x 1100L	4 x 1100L	1 x 240L	1 x 120L	-	-
Residential Apartment Block 7 (Shared)	11 x 1100L	21 x 1100L	14 x 240L	3 x 240L	-	-
Childcare Unit (Individual)	1 x 1100L	2 x 1100L	1 x 120L	1 x 120L	-	-
Medical Unit (Individual)	2 x 240L	1 x 1100L	1 x 120L	1 x 120L	-	Medical Waste bin Sharps Container
Community Unit (Individual)	2 x 1100L 1 x 240L	2 x 1100L	2 x 240L	2 x 240L	-	-
Commercial Units Block 3 (Shared)	2 x 1100L	4 x 1100L	1 x 240L	1 x 120L	-	-
Commercial Units Block 7 (Shared)	2 x 1100L	5 x 1100L	1x 240L	1 x 120L	-	-
Café Gate Lodge (Individual)	1 x 240L	1 x 240L	1 x 120L	Bottle Bag	-	-

*Note: * = Mixed Non-Recyclables*
*** = Dry Mixed Recyclables*

The waste receptacle requirements have been established from distribution of the total weekly waste generation estimate into the holding capacity of each receptacle type.

Waste storage receptacles as per Table 5.1 above (or similar appropriate approved containers) will be provided by the facility management company in the shared WSA.

The types of bins used will vary in size, design and colour dependent on the appointed waste contractor. However, examples of typical receptacles to be provided in the WSA are shown in Figure 5.1. All waste receptacles used will comply with the IS EN 840 2012 standard for performance requirements of mobile waste containers, where appropriate. Signage should be posted above or on the bins to show exactly which waste can be put in each.



Figure 5.1 Typical waste receptacles of varying size (240L and 1100L)

5.1 Waste Storage – Residential Units

Residents in apartments, duplexes and houses will be required to segregate their waste into the following main waste categories within their own units:

- Organic waste;
- DMR;
- Glass; and
- MNR.

Residents have been allocated either shared external WSAs, which are located on the ground level or individual WSAs which will be located in rear yards for those with external access, while units without external access to their rear yard will be supplied with shielded bin stores at the front of their unit.

Space will be provided in the residential units to accommodate 3 no. bins to facilitate waste segregation. Residential amenity waste will also be taken to the residential WSAs for storage.

Each bin/container in the WSAs will be clearly labelled and colour coded to avoid cross contamination of the different waste streams. Signage will be posted above or on the bins to show exactly which waste types can be placed in each bin.

Access to the residential shared WSAs will be restricted to authorised residents, facilities management and waste contractors by means of a key or electronic fob access.

It is anticipated that DMR, MNR, glass and organic waste will be collected on a weekly basis.

Other waste materials such as textiles, batteries, printer toner/cartridges and WEEE may be generated infrequently by the residents. Residents will be required to identify

suitable temporary storage areas for these waste items within their own units and dispose of them appropriately. Further details on additional waste types can be found in Section 5.5.

5.2 Waste Storage – Childcare / Retail / Café / Community Centre Units

Staff will be required to segregate their waste into the following waste categories within their own units:

- Organic waste;
- DMR;
- Glass; and
- MNR.

As required, the staff will need to bring segregated DMR, MNR, glass and organic waste to their dedicated commercial WSAs as covered in section 5.0.

Suppliers for the tenants should be requested by the tenants to make deliveries in reusable containers, minimize packaging or to remove any packaging after delivery where possible, to reduce waste generated by the development.

If any kitchens/food preparation areas are allocated in unit areas, this will contribute a significant portion of the volume of waste generated on a daily basis, and as such it is important that adequate provision is made for the storage and transfer of waste from these areas to the WSA.

If kitchens are required it is anticipated that waste will be generated in kitchens throughout the day, primarily at the following locations:

- Food Storage Areas (i.e. cold stores, dry store, freezer stores and stores for decanting of deliveries);
- Meat Preparation Area;
- Vegetable Preparation Area;
- Cooking Area;

Small bins will be placed adjacent to each of these areas for temporary storage of waste generated during the day.

Each bin/container in the WSAs will be clearly labelled and colour coded to avoid cross contamination of the different waste streams. Signage will be posted above or on the bins to show exactly which waste types can be placed in each bin.

Access to the WSAs will be restricted to authorised staff, facilities management and waste contractors by means of a key or electronic fob access.

Based on the recommended bin requirements in Table 5.1, DMR, MNR, glass and organic waste will be required to be collected weekly.

Other waste materials such as textiles, batteries, printer toner/cartridges and WEEE may be generated infrequently by the residents. Tenants will be required to identify suitable temporary storage areas for these waste items within their own units and dispose of them appropriately. Further details on additional waste types can be found in Section 5.5.

5.3 Waste Storage – Medical Unit

Waste will be generated from a wide variety of activities throughout the proposed medical centre. Healthcare risk wastes will typically be generated in the doctor

surgeries, consulting rooms and treatment rooms. DMR and MNR waste will be generated throughout the building. Confidential and non-confidential paper waste will mainly be generated in offices and staff workstations.

Organic (food) waste will be generated from staff lunches, micro kitchen areas and food brought into the building.

Appropriate colour coded, labelled and secured receptacles will be required for healthcare risk waste generated in the building as set out in the HSE, *Waste Management Awareness Handbook* (and illustrated in Figure 3.2). The required healthcare risk waste receptacles will be:

- Yellow bags (stored in rigid bins e.g. 60L pedal bin)
- Yellow rigid buckets with yellow lid

These waste receptacles will be stored in designated treatment rooms, doctor surgeries, consulting rooms and treatment rooms areas. Facilities or cleaning staff will transfer the risk waste bags/buckets on a regular basis to a dedicated clinical waste room in a segregated area of the medical WSA. This area will have at least 1 no. 770L litre yellow clinical waste bin and 1 no. roll cages.

In addition, clinical waste bags and sharps buckets may be temporarily transferred to utility stores located across the unit during the day prior to transfer to the clinical waste room. Where required, these temporary storage locations should have 60/80 litre pedal bins for yellow risk waste bags and shelf storage for sharps buckets. Facilities or cleaning staff will transfer this waste to the dedicated Clinical Waste Room on a daily basis.

Non-risk waste receptacles for DMR and MNR will be strategically positioned in the treatment rooms, consulting rooms and offices as necessary.

Where suitable, it is proposed that office and work station areas will utilise area waste stations (AWSs) for non-risk waste streams as opposed to using individual receptacles at desks. AWSs should be conveniently located within 10-15m of workstations, where possible, and would typically include:

- 1 no. 60/80 litre receptacle for dry mixed recyclables;
- 1 no. 60/80 litre receptacle for mixed non-recyclables; and
- 1 no. 60/80 litre receptacle for confidential paper.

In addition, smaller bins or caddies for organic and glass waste should be located in the micro kitchen areas.

Other waste materials such as batteries, WEEE, lightbulbs and printer toner/cartridges will be generated less frequently. The tenant will be required to store these waste types within their own unit and arrange collection with an appropriately licensed waste contractor. Facilties management may arrange collection depending on the agreement. Further details on additional waste types can be found in Section 5.5.

5.4 Waste Collection

There are numerous private contractors that provide waste collection services in the DLRCC area. All waste contractors servicing the proposed development must hold a valid waste collection permit for the specific waste types collected. All waste collected must be transported to registered/permitted/licensed facilities only.

Bins from the development will be brought to collection points by the waste contractor or facilities management, immediately prior to collection. The undercroft level carparks are insufficient in height for a waste truck to access; therefore, all waste will be

collected from staging areas. All locations for collection can be viewed on the drawings submitted with the planning application under separate cover.

HCRW from the Healthcare centre will be collected directly from the healthcare risk WSA by a waste contractor appointed directly by the HSE.

The confidential waste paper bin(s) will be collected/emptied directly from the building by an appointed waste contractor.

Following collection, bins will promptly be returned to the WSAs by personnel nominated by the facilities management company (or waste contractor, depending on arrangement).

Suitable access and egress has been provided to enable the bins to be moved easily from the WSA to the waste collection vehicles on the appropriate days. Waste will be collected at agreed days and times by the nominated waste contractors.

It is recommended that bin collection times/days are staggered to reduce the number of bins required to be emptied at once and the time the waste vehicle is onsite. This will be determined during the process of appointment of a waste contractor.

5.5 Additional Waste Materials

In addition to the typical waste materials that are generated on a daily basis, there will be some additional waste types generated from time to time that will need to be managed separately. A non-exhaustive list is presented below.

Green waste

Green waste may be generated from gardens, external landscaping and internal plants/flowers. Green waste generated from landscaping of external areas will be removed by external landscape contractors. Green waste generated from gardens internal plants/flowers can be placed in the organic waste bins.

Batteries

A take-back service for waste batteries and accumulators (e.g. rechargeable batteries) is in place in order to comply with the Waste Management Batteries and Accumulators Regulations 2014 as amended. In accordance with these regulations consumers are able to bring their waste batteries to their local civic amenity centre or can return them free of charge to retailers which supply the equivalent type of battery, regardless of whether or not the batteries were purchased at the retail outlet and regardless of whether or not the person depositing the waste battery purchases any product or products from the retail outlet.

The commercial tenants cannot use the civic amenity centre. They must segregate their waste batteries and either avail of the take-back service provided by retailers or arrange for recycling/recovery of their waste batteries by a suiltably permited/licenced contractor. Facilties management may arrange collection depending on the agreement.

Waste Electrical and Electronic Equipment (WEEE)

The *WEEE Directive 2002/96/EC* and associated Waste Management (WEEE) Regulations have been enacted to ensure a high level of recycling of electronic and electrical equipment. In accordance with the regulations, consumers can bring their waste electrical and electronic equipment to their local recycling centre. In addition consumers can bring back WEEE within 15 days to retailers when they purchase new equipment on a like for like basis. Retailers are also obliged to collect WEEE within 15 days of delivery of a new item, provided the item is disconnected from all mains, does not pose a health and safety risk and is readily available for collection.

As noted above, the commercial tenants cannot use the civic amenity centre. They must segregate their WEEE and either avail of the take-back/collection service provided by retailers or arrange for recycling/recovery of their WEEE by a suiltably permited/licenced contractor. Facilties management may arrange collection depending on the agreement.

Printer Cartridge/Toners

It is recommended that a printer cartridge/toner bin is provided in the commercial units, where appropriate. The commercial tenants tenants will be required to store this waste within their unit and arrange for return to retailers or collection by an authorised waste contractor, as required.

Waste printer cartridge/toners generated by residents can usually be returned to the supplier free of charge or can be brought to a civic amenity centre.

Chemicals (solvents, paints, adhesives, resins, detergents etc)

Chemicals (such as solvents, paints etc) are largely generated from building maintenance works. Such works are usually completed by external contractors who are responsible for the off-site removal and appropriate recovery/recycling/disposal of any waste materials generated.

Any waste cleaning products or waste packaging from cleaning products generated in the commercial units that is classed as hazardous (if they arise) will be appropriately stored within the tenants own space. Facilties management may arrange collection depending on the agreement.

Any waste cleaning products or waste packaging from cleaning products that are classed as hazardous (if they arise) generated by the residents should be brought to a civic amenity centre.

Light Bulbs (Fluorescent Tubes, Long Life, LED and Lilament bulbs)

Waste light bulbs may be generated by lighting at the commercial tenants. It is anticipated that commercial tenants will be responsible for the off-site removal and appropriate recovery/disposal of these wastes. Facilties management may arrange collection depending on the agreement.

Light bulbs generated by residents should be taken to the nearest civic amenity centre for appropriate storage and recovery/disposal.

Textiles

Where possible, waste textiles should be recycled or donated to a charity organisation for reuse.

Waste Cooking Oil

If the comercial tenants use cooking oil, waste cooking oil will need to be stored within the unit on a bunded area or spill pallet and regular collections by a dedicated waste contractor will need to be organised as required. Under sink grease traps will be installed in any cooking space.

If the residents generate waste cooking oil, this can be brought to a civic amenity centre.

Furniture (and other bulky wastes)

Furniture and other bulky waste items (such as carpet etc.) may occasionally be generated by the commercial tenants. The collection of bulky waste will be arranged as required by the tenant. If residents wish to dispose of furniture, this can be brought a civic amenity centre.

Abandoned Bicycles

Bicycle parking areas are planned for the development. As happens in other developments, residents sometimes abandon faulty or unused bicycles and it can be difficult to determine their ownership. Abandoned bicycles should be donated to charity if they arise.

Covid-19 Waste

Any waste generated by residents or staff that have tested positive for Covid-19 should be manged in accordance with the current Covid-19 HSE Guidelines at the time that that waste arises. At the time this report was prepared, the HSE Guidelines require the following procedure for any waste from a person that tests positive for Covid-19:

- Put all waste (gloves, tissues, wipes, masks) from that person in a bin bag and tie when almost full;
- Put this bin bag into a second bin bag and tie a knot;
- Store this bag safely for 3 days, then put the bag into the non-recyclable waste/general waste wheelie bin for collection/emptying.

Please note that this guidance is likely to be updated by the time the development is open and occupied and the relevant guidance at the time will need to be reviewed.

5.6 Waste Storage Area Design

The shared WSAs should be designed and fitted-out to meet the requirements of relevant design Standards, including:

- Be fitted with a non-slip floor surface;
- Provide ventilation to reduce the potential for generation of odours;
- Provide suitable lighting – a minimum Lux rating of 220 is recommended;
- Appropriate sensor controlled lighting;
- Be easily accessible for people with limited mobility;
- Be restricted to access by nominated personnel only;
- Be supplied with hot or cold water for disinfection and washing of bins;
- Be fitted with suitable power supply for power washers;
- Have a sloped floor to a central foul drain for bins washing run-off;
- Have appropriate graphical and written signage placed above and on bins indicating correct use;
- Have access for potential control of vermin, if required;
- Robust design of doors to bin area incorporating steel sheet covering where appropriate; and
- Be fitted with CCTV for monitoring.

The facility management company will be required to maintain bins and storage areas in good condition as required by the DLRCC *Waste Bye*-Laws.

Access to the Healthcare Risk WSA at ground level should be restricted to authorised staff, be sufficient to allow a 770 litre bin to pass easily into and out of the room for transfer via the service walkway to the waste collection zone. 770 litre bins used in the healthcare waste industry are typically 770mm wide.

In accordance with the HSE publication *National Hospital Office – National Cleaning Manual Appendices*, the following specifications are also required:

- The waste receptacle including all component parts should be clean and well-maintained with no blood or body substances, rust, dust, dirt, debris and spillages.

- Bins should be emptied as appropriate, with fresh liners fitted in accordance with local and national policy. Bags should be removed and labelled/tagged when no more than ¾ full and stored appropriately in a secure location.
- There should be an agreed schedule in operation for replacement of sani-bins in place.
- The sani-bin/nappy bin, including all component parts should be clean and well-maintained with no blood or body substances, rust, dust, dirt, debris and spillages.

The project Architects (Reddy Architecture and Urbanism) site layout plan indicates the indicative site and building layout, including waste storage areas for planning purposes, more detailed layouts will be produced as part of the detailed design process. The waste storage areas identified on the plans are sufficiently sized to accommodate the waste which will be generated within the development and are appropriately located to allow for collection of this waste.

5.7 Facility Management Responsibilities

It shall be the responsibility of the Facilities Management Company to ensure that all domestic waste generated by apartment residents and commercial tenants is managed to ensure correct storage prior to collection by an appropriately permitted waste management company.

Facilities Management should provide the following items in accordance with the DLRCC *the Guidance Notes for Waste Management in Residential and Commercial Developments:*

- Provision of a Waste Management Plan document, prepared by the Facilities Management Company to all residential units and commercial tenants, which shall clearly state the methods of source waste segregation, storage, reuse and recycling initiatives that shall apply to the management of the development;
- Provision and maintenance of appropriate graphical signage to inform residents and tenants of their obligation to reduce waste, segregate waste and in the correct bin;
- Preparation of an annual waste management report for all residential units and commercial tenants;
- Designation of access routes to common waste storage areas to ensure safe access from the apartment units by mobility impaired persons (See Appendix A);
- Provision of an appropriately qualified and experienced staff member, who will be responsible for all aspects of waste management at the development;
- Daily inspection of waste storage areas and signing of a daily check list, which shall be displayed within the area; and
- Maintenance of a weekly register, detailing the quantities and breakdown of wastes collected from the development and provision of supporting documentation by the waste collector to allow tracking of waste recycling rates.

6.0 CONCLUSIONS

In summary, this OWMP presents a waste strategy that complies with all legal requirements, waste policies and best practice guidelines and demonstrates that the required storage areas have been incorporated into the design of the development.

Implementation of this OWMP will ensure a high level of recycling, reuse and recovery at the development. All recyclable materials will be segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus achieving the targets set out in the *EMR Waste Management Plan 2015 – 2021*.

Adherence to this plan will also ensure that waste management at the development is carried out in accordance with the requirements The DLRCC Guidance Notes for Waste Management Planning, the *DLRCC Waste Bye-Laws* and DLRCC Guidance Notes for Waste Management in Large Residential and Commercial Developments.

The waste strategy presented in this document will provide sufficient storage capacity for the estimated quantity of segregated waste. The designated area for waste storage will provide sufficient room for the required receptacles in accordance with the details of this strategy.

7.0 REFERENCES

1. Waste Management Act 1996 – 2021 as amended
2. Environmental Protection Act 1992 (Act No. 7 of 1992) as amended;
3. Litter Pollution Act 1997 (Act No. 12 of 1997) as amended;
4. Eastern-Midlands Waste Region, *Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021* (2015)
5. Dún Laoghaire Rathdown County Council (DLRCC), Dún Laoghaire Rathdown County Council Segregation, Storage and Presentation of Household and Commercial Waste) Bye-laws (2019).
6. DLRCC, Guidance Notes for Waste Management in Residential & Commercial Developments (2020)
7. Health Service Executive (HSE), *Waste Policy* (2016)
8. Health Service Executive (HSE), *Waste Management Awareness Handbook* (2011)
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    - EPA Green Healthcare, Best Practice Guide Maximise Recycling And Reduce Landfill Waste
11. Department of Environment and Local Government (DoELG) *Waste Management – Changing Our Ways, A Policy Statement* (1998)
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14. DoEHLG, *Taking Stock and Moving Forward* (2004)
15. Department of Communications, Climate Action and Environment (DCCAE), *Waste Action Plan for the Circular Economy - Ireland's National Waste Policy 2020-2025* (2020).
16. DCCAE, *Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less*' (2021)
17. Environmental Protection Agency (EPA), *National Waste Database Reports 1998 – 2012*.
18. DLRCC, *Dún Laoghaire Rathdown County Council Development Plan 2016 – 2022.*
19. DLRCC, Draft *Dún Laoghaire Rathdown County Council Development Plan 2022 – 2028 (2021).*
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22. Hazardous Waste List - Council Decision 94/904/EC (as per Council Directive 91/689/EEC).
23. EPA, *European Waste Catalogue and Hazardous Waste List* (2002)
24. EPA, *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous* (2015)
25. BS 5906:2005 Waste Management in Buildings – Code of Practice.
26. DoEHLG, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Department of Housing Local Government and Heritage (DoHLGH),

Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2020).

27. DoHLGH, *Design Manual for Urban Roads and Streets* (2019)

APPENDIX 22.1

Table 22.1: Schedule of Proposed Environmental Commitments		
Mitigation/ Monitoring No.	**Description of Mitigation/Environmental Commitment**	**Phase**
Population and Human Health (Chapter 7)		
Mitigation		
No specific mitigation measures required		

Mitigation No.	Description of Mitigation/Environmental Commitment	Phase
Biodiversity (Chapter 8)		
B_1	A pre-construction inspection for terrestrial mammals will be carried out.	Construction
B_2	Removal of deciduous trees. Should any mature broadleaved tree be scheduled for removal as part of the development plans, it should first be surveyed for bat presence by a suitably experienced specialist. If bats are found, an application for a derogation licence should be made to the National Parks and Wildlife Service to allow its legal removal. Such trees should ideally be felled in the period late August to late October, or early November, in order to avoid disturbance of any roosting bats as per National Roads Authority guidelines (NRA 2006a and 2006b) and also to avoid the bird breeding seasons. Tree felling should be completed by mid-November at the latest as bats roosting in trees are very vulnerable to disturbance during their hibernation period (November – April). Trees may be removed at other times but the likelihood of encountering bats during works will be higher. Trees with ivy-cover, once felled, should be left intact onsite for 24 hours prior to disposal to allow any bats beneath foliage to escape overnight.	Construction
B_3	Trees to be retained. Several species of bats roost in trees. Where possible, treelines and mature trees that are located immediately adjacent to planned construction areas or are not directly impacted should be avoided and retained intact. Retained trees will be protected from root damage by machinery by an exclusion zone of at least 5 metres or equivalent to canopy height. Such protected trees should be fenced off by adequate temporary fencing prior to other works commencing.	Construction
B_4	A pre-construction bat assessment will be carried out on all buildings to be demolished.	Construction
B_5	Native species will be chosen in all landscaping schemes. Planting schemes should attempt to link in with existing wildlife corridors (hedgerows and treelines), both onsite and off, to provide continuity of wildlife corridors. Retention of boundary hedgerows and treelines will also serve to screen the development.	Construction

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B_6	Lighting restrictions. In general, artificial light creates a barrier to bats so lighting should be avoided where possible. Where lighting is required, directional lighting (i.e. lighting which only shines on work areas and not nearby countryside) will be used to prevent overspill during construction. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvers and shields to direct the light to the intended area only. Mature trees should not be directly lit during construction or operation of the proposed development.	Construction
B_7	45 bird boxes and 10 bat boxes will be placed on site as an enhancement and mitigation measure. The position of these boxes will be carried out in consultation with an ecologist.	Construction
B_8	Control measures will be carried out on the Himalayan balsam on site as outlined in the CEMP.	Construction
B_9	A post construction bat survey will be carried out and lighting on site will be assessed by an ecologist post construction.	Operational
B_10	A post construction inspection of drainage connections to the onsite drain will be carried out by the project ecologist to ensure that the petrochemical interceptor is in place and working.	Operational

Mitigation/ Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Land, Soils, Geology and Hydrogeology (Chapter 9)		
Mitigation		
LS_1	To prevent the accidental release of hazardous materials (fuels, paints, cleaning agents, etc.) during construction site activity all hazardous materials will be stored within secondary containment designed to retain at least 110% of the storage contents. Temporary bunds for oil/diesel storage tanks will be used on the site during the construction phase of the project. Safe materials handling of all potentially hazardous materials will be emphasised to all construction personnel employed during this phase of the project.	Construction
LS_2	Sediment runoff will be minimised by standard engineering measures including sediment skirts around soil stockpiles, sediment retention barriers in surface water drains and the use of adequate construction roads.	Construction
LS_3	The provision of wheel wash areas at the construction entrances to the development will minimise the amount of soil deposited on the surrounding road network.	Construction
LS_4	Measures will be implemented throughout the construction stage to minimise the risk of contamination of the soil from accidental oil and petrol leakage from site plant. All lock up/storage areas will have a metal or concrete	Construction

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	leak proof floor. Any accidental chemical spillages should be cleaned up and disposed of in an approved landfill site in accordance with the chemical manufacturer's recommendations.	
LS_5	Exposed soil surfaces to be protected with 150mm tone hardcore layer.	Construction

Mitigation/ Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Hydrology (Chapter 10)		
Mitigation		
H_1	Any run-off will be intercepted on site, where the ground falls towards adjoining properties or public roads/footpaths. This will be achieved with open drains or French drains and collected for treatment based on the conditions of a DLRCC and/or Irish Water licence, prior to pumping to the surface sewer network.	Construction
H_2	Direct uncontrolled run-off into the drainage ditch running through the site will not be allowed.	Construction
H_3	Care will be taken to ensure that exposed soil surfaces are stable to minimise erosion. All exposed soil surfaces will be within the main excavation site which limits the potential for any offsite impacts.	Construction
H_4	Any discharge of construction water required during the construction phase will be to foul sewer. Pre-treatment and silt reduction measures on site will include a combination of silt fencing, settlement measures (silt traps, 20 m buffer zone between machinery and watercourses/ stormwater sewer/ drainage ditch, refuelling of machinery off site) and hydrocarbon interceptors.	Construction
H_5	Any minor ingress of groundwater and collected rainfall in the excavation will be pumped out during construction. It is estimated that the inflow rate of groundwater will be low and limited to localised perched water. It is therefore proposed that the water be discharged via the existing stormwater sewer network. Extensive monitoring will be adopted by personnel with special qualifications in environmental monitoring and water quality to ensure that the water is of sufficient quality to discharge to the sewer. The use of silt traps and an oil interceptor (if required) will be adopted if the monitoring indicates the requirements for the same with no silt or contaminated water permitted to discharge to the sewer. There may be localised pumping of surface run-off from the excavations during and after heavy rainfall events to ensure that the excavations are kept relatively dry. Due to the very low permeability of the Dublin Boulder Clay and the relative shallow nature for excavations, infiltration to the underlying aquifer is not anticipated. Based on SI information (Site Investigations Ltd, 2021), it is not anticipated that there will be rock removal required for the proposed single storey basements in the development, for building foundations, for service trenches or for any other works.	Construction

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H_6	Run-off water containing silt will be contained on site via settlement tanks and treated to ensure adequate silt removal. Silt reduction measures on site will include a combination of silt fencing and settlement measures (silt traps, silt sacks and settlement tanks/ponds).	Construction
H_7	The temporary storage of soil will be carefully managed. Stockpiles will be tightly compacted to reduce runoff and graded to aid in runoff collection. This will prevent any potential negative impact on the stormwater drainage and the material will be stored away from any surface water drains. Movement of material will be minimised to reduce the degradation of soil structure and generation of dust. Excavations will remain open for as little time as possible before the placement of fill. This will help to minimise the potential for water ingress into excavations. Soil from works will be stored away from existing drainage features to remove any potential impact.	Prior to Commencement Construction
H_8	Weather conditions will be considered when planning construction activities to minimise the risk of run-off from the site and the suitable distance of topsoil piles from surface water drains will be maintained.	Construction
H_9	To minimise any impact on the underlying subsurface strata from material spillages, all oils, solvents and paints used during construction will be stored within temporary bunded areas. Oil and fuel storage tanks shall be stored in designated areas, and these areas shall be bunded to a volume of 110% of the capacity of the largest tank/container within the bunded area(s) (plus an allowance of 30 mm for rainwater ingress). Drainage from the bunded area(s) shall be diverted for collection and safe disposal.	Construction
H_10	Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in a designated area (or where possible off the site) which will be away from surface water gulleys, the existing open ditch or drains. In the event of a machine requiring refuelling outside of this area, fuel will be transported in a mobile double skinned tank. An adequate supply of spill kits and hydrocarbon adsorbent packs will be stored in this area. All relevant personnel will be fully trained in the use of this equipment. Guidelines such as "Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors" (CIRIA 532, 2001) will be complied with.	Construction
H_11	Where feasible all ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline wastewaters or contaminated storm water to the underlying subsoil. Wash down and washout of concrete transporting vehicles will take place at an appropriate facility offsite.	Construction
H_12	In the case of drummed fuel or other chemical which may be used during construction, containers should be stored in a dedicated internally bunded chemical storage cabinet and labelled clearly to allow appropriate remedial action in the event of a spillage. Emergency response procedures will be outlined in the projected detailed CEMP. All personnel working on the site will be suitably trained in the implementation of the procedures.	Construction

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H_13	Temporary storage of soil will be carefully managed in such a way as to prevent any potential negative impact on the receiving environment. The material will be stored away from any surface water drains (see Surface Water Run-off section above). Movement of material will be minimised to reduce degradation of soil structure and generation of dust.	Construction
H_14	All excavated materials will be visually assessed for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of potential contaminants to ensure that historical pollution of the soil has not occurred. Should it be determined that any of the soil excavated is contaminated, this will be segregated and appropriately disposed of by a suitably permitted/licensed waste disposal contractor.	Construction
H_15	Site investigations carried out at the site in 2021 found no residual contamination on site. Nonetheless, all excavated materials will be visually assessed for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of potential contaminants to ensure that historical pollution of the soil has not occurred. Should it be determined that any of the soil excavated is contaminated, this will be segregated and appropriately disposed of by a suitably permitted/licensed waste disposal contractor.	Operational

Mitigation/ Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Air Quality and Climate (Chapter 11)		
Mitigation		
AC_1	Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic.	Construction
AC_2	Any road that has the potential to give rise to fugitive dust must be regularly watered, as appropriate, during dry and/or windy conditions.	Construction
AC_3	Vehicles exiting the site will make use of a wheel wash facility where appropriate, prior to entering onto public roads.	Construction
AC_4	Vehicles using site roads will have their speed restricted, and this speed restriction must be enforced rigidly. On any un-surfaced site road, this will be 20 kph, and on hard surfaced roads as site management dictates.	Construction
AC_5	Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary.	Construction

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AC_6	Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods.	Construction
AC_7	During movement of materials both on and off-site, trucks will be stringently covered with tarpaulin at all times. Before entrance onto public roads, trucks will be adequately inspected to ensure no potential for dust emissions.	Construction
AC_8	The prevention of on-site or delivery vehicles from leaving engines idling, even over short periods.	Construction
AC_9	Minimising waste of materials due to poor timing or over ordering on site will aid to minimise the embodied carbon footprint of the site.	Construction

Mitigation/ Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Noise and Vibration (Chapter 12)		
Mitigation		
N_1	This practice is recommended in relation to static plant such as compressors and generators. It is recommended that these units be supplied with manufacturers' proprietary acoustic enclosures. The potential for any item of plant to generate noise will be assessed prior to the item being brought onto the site. The least noisy item should be selected wherever possible. Should a particular item of plant already on the site be found to generate high noise levels, the first action should be to identify whether or not said item can be replaced with a quieter alternative.	Construction
N_2	If replacing a noisy item of plant is not a viable or practical option, consideration will be given to noise control at source. This refers to the modification of an item of plant or the application of improved sound reduction methods in consultation with the supplier. For example, resonance effects in panel work or cover plates can be reduced through stiffening or application of damping compounds; rattling and grinding noises can often be controlled by fixing resilient materials in between the surfaces in contact. The following best practice migration measures will be employed : • Site compounds will be located away from noise sensitive boundaries within the site constraints. • The lifting of bulky items, dropping and loading of materials within these areas will be restricted to normal working hours.	Construction

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	• For mobile plant items such as cranes, dump trucks, excavators and loaders, utilising an acoustic canopy to replace the normal engine cover and/or ensuring the enclosure panels are closed during operation can reduce noise levels over normal operation. Mobile plant will be switched off when not in use and not left idling. • For steady continuous noise, such as that generated by diesel engines, noise control measures include fitting a more effective exhaust silencer system to reduce the noise emitted. • For percussive tools such as pneumatic breakers, a number of noise control measures include fitting muffler or sound reducing equipment to the breaker tool and ensuring any leaks in the air lines are sealed. • Erecting localised screens around breaker or drill bit when in operation in close proximity to noise sensitive boundaries. • For concrete mixers, control measures will be employed during cleaning to ensure no impulsive hammering is undertaken at the mixer drum. • For all materials handling, materials will not be dropped from excessive heights, lining drops chutes and dump trucks with resilient materials. • For compressors, generators and pumps, these will be surrounded by acoustic lagging or enclosed within acoustic enclosures providing air ventilation. • All items of plant will be subject to regular maintenance. Such maintenance can prevent unnecessary increases in plant noise and can serve to prolong the effectiveness of noise control measures.	
N_3	Screening is an effective method of reducing the noise level at a receiver location and can be used successfully as an additional measure to all other forms of noise control. Standard construction site hoarding (2.4m in height) with a mass per unit of surface area greater than 7 kg/m^2 can provide adequate sound insulation. This will be required, as a minimum around the site perimeter.	Construction
N_4	A designated Community Liaison Officer (CLO) will be appointed to site during construction works. Any noise complaints will be logged and followed up in a prompt fashion by the CLO. In addition, prior to particularly noisy construction activity (e.g. piling), the CLO will inform the nearest noise sensitive locations of the time and expected duration of the noisy works.	Construction
N_5	The phasing programme will be arranged so as to control the amount of disturbance in noise and vibration sensitive areas at times that are considered of greatest sensitivity. If piling works are in progress on another site at the same time as other works of construction that themselves may generate significant noise and vibration, the working programme will be phased so as to ensure noise limits are not exceeded due to cumulative activities. This will be reviewed in relation to other potential cumulative works occurring on adjacent construction site in	Construction

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	close proximity to noise sensitive properties which have the potential to lead to significant construction noise impacts.	
N_6	The assessment outlined previously has specified noise limits at the nearest noise sensitive properties that must be achieved in order to ensure the impact is acceptable, summarised in Section 12.2.2.1. To achieve these noise limits, it will be necessary to review (at the detailed design stage) the variety of mitigation measures and forms of noise control techniques that will be applicable. Some example of these measures are as follows: • Duct-mounted attenuators on the atmosphere side of air moving plant; • Splitter attenuators or acoustic louvres providing free ventilation to internal plant areas; • Solid barriers screening any external plant; and • Anti-vibration mounts on reciprocating plant. In addition to the above, the following measures will be adopted to minimise potential noise disturbance for neighbours: • All mechanical plant items (e.g. motors, pumps etc.) shall be regularly maintained to ensure that excessive noise generated by any worn or rattling components is minimised; • Any new or replacement mechanical plant items, including plant located inside new or existing buildings, shall be designed so that all noise emissions from site do not exceed the noise limits outlined in this document; and • Plant items will be selected such that site noise emissions do not contain tonal or impulsive characteristics at nearby noise sensitive locations.	Operational
N_7	Taking into account that sensitive receivers within the development are much closer than off-site sensitive receivers, once the relevant noise criteria included in Section 12.5.6 (i.e. design criterion is the order of **40dB $L_{Aeq,15min}$** during daytime periods and **35dB $L_{Aeq,15min}$** at night at the façades of the nearest noise sensitive locations). It is expected that there will be no negative impact at sensitive receivers on or off site, and therefore no further mitigation required.	Operational
N_8	The British Standard BS EN 12354-3: 2000: *Building acoustics – Estimation of acoustic performance of buildings from the performance of elements – Part 3: Airborne sound insulation against outdoor sound* provides a calculation methodology for determining the sound insulation performance of the external envelope of a	Operational

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	building. The method is based on an elemental analysis of the building envelope and can take into account both the direct and flanking transmission paths. The Standard allows the acoustic performance of the building to be assessed taking into account the following: • Construction type of each element (i.e. windows, walls, etc.); • Area of each element; • Shape of the façade, and; • Characteristics of the receiving room. The principals outlined in BS EN 12354-3 are also referred to in BS8233 and Annex G of BS8233 provides a calculation method to determine the internal noise level within a building using the composite sound insulation performance calculated using the methods outlined in BS EN 12354-3. The methodology outlined in Annex G of BS8233 has been adopted here to determine the required performance of the building facades. ***Glazing*** As is the case in most buildings, the glazed elements of the building envelope are typically the weakest element from a sound insulation perspective. In this instance it has been calculated that the various facades are to be provided with glazing that, when closed, achieve the minimum sound insulation performance as set out in Table 1.28 (and assigned to each applicable façade in Figure 1.15). Test data should be sought from the supplier of the glazing at detailed design stage to ensure that the acoustic specification is met. It is important to note that the acoustic performance specifications detailed herein are minimum requirements which apply to the overall glazing system. In the context of the acoustic performance specification the 'glazing system' is understood to include any and all of the component parts that form part of the glazing element of the façade, i.e. glass, frames, seals, openable elements etc. The assessment has demonstrated that the recommended internal noise criteria can be achieved through consideration of the proposed façade elements at the design stage. The calculated glazing specifications are preliminary and are intended to form the basis for noise mitigation at the detailed design stage. ***Wall Construction***	

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	In general, all wall constructions (i.e. blockwork or concrete) offer a high degree of sound insulation, much greater than that offered by glazing systems. Therefore, noise intrusion via the wall construction will be minimal. The calculated internal noise levels across the building façade have assumed a minimum sound reduction index of 54 dB R_w for this construction. ***Ventilation*** The ventilation strategy for the development is for mechanical ventilation. Mechanical ventilation systems typically offer a high performance in terms of preventing sound intrusion from external sources, consequently there is no assessment of the ventilation system required for this noise impact assessment. ***Internal Noise Levels*** Taking into account the external façade levels and the specified building envelope, the internal noise levels have been calculated. In all instances the good internal noise criteria are achieved for daytime and night-time periods i.e. at or below the internal noise level thresholds outlined in Table 1.25.	

Mitigation/ Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Landscape and Visual (Chapter 13)		
Mitigation		
No mitigation measures required		

Mitigation/ Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Cultural Heritage and Archaeology (Chapter 14)		
Mitigation		
CH_1	The archaeological features identified in AA1-AA5 will be preserved by record through full archaeological excavation. The work should be carried out under licence to the National Monuments Service of the DoHLGH.	Construction
CH_2	All topsoil stripping associated with the proposed development will be monitored by a suitably qualified archaeologist. If any features of archaeological potential are discovered during the course of the works further	Construction

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	archaeological mitigation may be required, such as preservation in-situ or by record. Any further mitigation will require approval from the National Monuments Service of the DHLGH.	

Mitigation No.	Description of Mitigation/Environmental Commitment	Phase
Architectural Heritage (Chapter 15)		
Mitigation		
CH_1	The heights of Block 2 to the immediate east of the Main Hospital Building have been set to ensure that the dominance of the Main Hospital Building is retained.	Operational
CH_2	The historic landscape to the immediate south of the Main Hospital Building will be retained and enhanced. The main car-park and the C20 swimming-pool building are both proposed for removal and the areas of landscaping reinstated.	Operational
CH_3	Where sections of the wall are being removed, and where it is feasible to do so, the wall will not be removed in full but reduced to a height of 1200mm.	Operational
CH_4	Where sections of wall are being removed completely, and where it is feasible to do so, the former position of the wall will be indicated in the landscaping by use of natural stone as the paving material.	Operational
CH_5	Where sections of the wall are removed completely, the retained sections will be terminated in such a fashion as to indicate that the wall did not merely terminate there but has been purposely interrupted, e.g. by the use of sensitively and appropriately detailed piers in masonry, concrete or metal.	Operational
CH_6	The historic landscape in the immediate environs of the Chapel will be retained and enhanced.	Operational
CH_7	Changing the site from being a private demesne to a publicly accessible area brings with it the possibility of the Chapel acquiring a larger congregation and playing a productive part in the lives of more people.	Operational
CH_8	The proposed road alignment in proximity to the farmstead preserves the ability to view and appreciate the complex of buildings.	Operational

Mitigation/ Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Microclimate - Wind (Chapter 16)		
Mitigation		
No mitigation measures required		

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Mitigation/ Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Material Assets – Roads and Traffic (Chapter 17)		
Mitigation		
RT_1	Tracked excavators will be moved to and from the Site on low-loaders and will not be permitted to drive onto the adjacent roadway.	Construction
RT_2	The applicant shall at all times keep all public and private roads and footpaths entirely free of excavated materials, debris and rubbish.	Construction
RT_3	Public roads outside the Site shall be regularly inspected for cleanliness, as a minimum on a daily basis, and cleaned as necessary. A road sweeper will be made available to ensure that public roads are kept free of debris.	Construction
RT_4	The applicant shall be responsible for and make good any damages to existing roads or footpaths caused by his own contractors or suppliers transporting to and from the Site.	Construction
RT_5	The contractor shall confine his activities to the area of the Site occupied by the works and the builders' compound, as far as practicably possible, during any particular phase of the works.	Construction
RT_6	All construction workers will be encouraged to use public transport, and also to car share where appropriate. On site staff car parking can also be provided to ensure no construction workers will be required to park on adjacent roads or streets.	Construction
RT_7	No daytime or night-time parking of site vehicles or construction staff vehicles will be permitted outside agreed areas.	Construction
RT_8	Construction work will be limited to normal working hours; that are 08.00 – 19.00 on weekdays and 08.00 – 14.00 on Saturdays. All deliveries of materials, plant and machinery to the Site and removals of waste or other material will take place within the permitted hours of work. Vehicle movements will be planned to ensure arrival and departure times are maintained inside the agreed working hours.	Construction
RT_9	Deliveries will be co-ordinated to prevent queuing of vehicles adversely affecting traffic flow and to minimise disruption to local traffic. They will be timed and coordinated to avoid conflict with collection of waste, other deliveries (particularly to adjoining owners), and rush hour traffic. Large deliveries will be scheduled outside peak traffic hours to minimise disruption.	Construction
RT_10	Properly designed and designated access and egress points to the construction site will be used to minimise impact on external traffic.	Construction
RT_11	Firm, level, and well-drained pedestrian walkways will be provided.	Construction

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RT_12	Adequate visibility will be provided at the proposed access point to the proposed development off Dundrum Road.	Construction
RT_13	Footpaths will not be blocked resulting in pedestrians having to step onto the carriageway.	Construction
RT_14	The final Construction Traffic Management Plan with be submitted and agreed with the planning authority prior to the commencement of any development.	Construction
RT_15	A Mobility Management Plan has been prepared for the proposed development which includes recommended mitigation measures to reduce usage of private cars and increase the use by residents and patrons within the development of more sustainable modes of travel, such as including good cycle parking provision, will further promote the greater use of sustainable travel modes. It is projected that successful implementation of the mobility management plan measures included will reduce the vehicular trip generation from the proposed development below that included for in the Traffic Impact Assessment for the proposed development. For further details refer to the Traffic & Transport Assessment and Mobility Management Plan included separately with the wider response to the Further Information Request for the proposed development.	Operational
RT_16	A Stage 2 Road Safety Audit (RSA) will be undertaken at the detailed design stage to ensure that the final design is in accordance with the TII Road Safety Audit Guidelines (December 2017) prior to the commencement of construction. A Stage 3 post construction and pre-opening of the proposed development in accordance with RSA guidelines to address any potential road safety issues related to the completed scheme.	Operational
RT_17	During the operational phase of the development, it is projected that the adjoining road network can readily accommodate the additional traffic from the proposed development.	Operational
RT_18	The recent improvement to the Luas has significantly increased the capacity of the route and the Luas is future proofed to accommodate further capacity increases to 2030. The bus network capacity is also proposed to be increased city wide over the coming years up to 2030.	Operational
RT_19	DLR in consultation with the NTA are preparing an Area Based Travel Plan (ABTP) which includes the CMH site. This will further promote sustainable travel modes in the area.	Operational
RT_20	Wider national, regional and local policy objectives combined with planned investment in sustainable travel modes will further mitigate the impact of the development over time.	Operational

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Mitigation/ Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Material Assets – Waste (Chapter 18)		
Mitigation		
WM_1	As previously stated, a project specific C&D RWMP has been prepared in line with the requirements of the requirements of the Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects (DoEHLG, 2006) and The EPA, Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects' (2021) and is included as Appendix 18.1. The mitigation measures outlined in the C&D RWMP will be implemented in full and form part of mitigation strategy for the site. The mitigation measures presented in this C&D RWMP will ensure effective waste management and minimisation, reuse, recycling, recovery and disposal of waste material generated during the excavation and construction phases of the proposed development. • Prior to commencement, the appointed Contractor(s) will be required to refine / update the C&D RWMP (Appendix 18.1) in agreement with DLRCC, or submit an addendum to the C&D RWMP to DLRCC, detailing specific measures to minimise waste generation and resource consumption requested by DLRCC, and provide details of the proposed waste contractors and destinations of each waste stream. • The Contractor will be required to fully implement the C&D RWMP throughout the duration of the proposed construction and demolition phases. A quantity of topsoil, sub soil, clay and made ground which will need to be excavated to facilitate the proposed Development. Project Engineers have estimated that c. 56,677 m^3 of excavated material will need to be removed off-site, however it is envisaged that c. 7,199 m^3 excavated material will be reused on-site as fill. Correct classification and segregation of the excavated material is required to ensure that any potentially contaminated materials are identified and handled in a way that will not impact negatively on workers as well as on water and soil environments, both on and off-site.	Construction

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WM_2	• Building materials will be chosen with an aim to 'design out waste'; • On-site segregation of waste materials will be carried out to increase opportunities for off-site reuse, recycling and recovery. The following waste types, at a minimum, will be segregated: □ Concrete rubble (including ceramics, tiles and bricks); □ Plasterboard; □ Metals; □ Glass; and □ Timber. • Left over materials (e.g. timber off-cuts, broken concrete blocks / bricks) and any suitable construction materials shall be re-used on-site, where possible; • All waste materials will be stored in skips or other suitable receptacles in designated areas of the site; • Any hazardous wastes generated (such as chemicals, solvents, glues, fuels, oils) will also be segregated and will be stored in appropriate receptacles (in suitably bunded areas, where required); • A Waste Manager will be appointed by the main Contractor(s) to ensure effective management of waste during the demolition, excavation and construction works; • All construction staff will be provided with training regarding the waste management procedures; • All waste leaving site will be reused, recycled or recovered, where possible, to avoid material designated for disposal; • All waste leaving the site will be transported by suitably permitted contractors and taken to suitably registered, permitted or licenced facilities; and • All waste leaving the site will be recorded and copies of relevant documentation maintained.	Construction
WM_3	Nearby sites requiring clean fill material will be contacted to investigate reuse opportunities for clean and inert material, if required. If any of the material is to be reused on another site as by-product (and not as a waste), this will be done in accordance with Article 27 of the EC (Waste Directive) Regulations (2011). EPA approval will	Construction

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	be obtained prior to moving material as a by-product. However, it is not currently anticipated that Article 27 will be used.	
WM_4	As previously stated, a project specific OWMP has been prepared and is included as Appendix 18.2. The mitigation measures outlined in the OWMP will be implemented in full and form part of mitigation strategy for the site. Implementation of this OWMP will ensure a high level of recycling, reuse and recovery at the development. All recyclable materials will be segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus achieving the targets set out in the EMR Waste Management Plan 2015 – 2021, *Waste Action Plan for a Circular Economy – Waste Management Policy in Ireland* and the DLRCC waste bye-laws. • The Operator / Buildings Manager of the Site during the operational phase will be responsible for ensuring – allocating personnel and resources, as needed – the ongoing implementation of this OWMP, ensuring a high level of recycling, reuse and recovery at the Site of the proposed Development. In addition, the following mitigation measures will be implemented: • The Operator / Buildings Manager will ensure on-Site segregation of all waste materials into appropriate categories, including (but not limited to): □ Organic waste; □ Dry Mixed Recyclables; □ Mixed Non-Recyclable Waste; □ Glass; □ Waste electrical and electronic equipment (WEEE); □ Batteries (non-hazardous and hazardous); □ Cooking oil; □ Light bulbs; □ Cleaning chemicals (pesticides, paints, adhesives, resins, detergents, etc.); □ Furniture (and from time to time other bulky waste);	Operational

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	□ Abandoned bicycles; and □ Healthcare Risk Waste. • The Operator / Buildings Manager will ensure that all waste materials will be stored in colour coded bins or other suitable receptacles in designated, easily accessible locations. Bins will be clearly identified with the approved waste type to ensure there is no cross contamination of waste materials; • Health Care Risk Waste generated at the healthcare facility will comprise and be segregated into in yellow bags (such as dressings, swabs, bandages, gloves etc.) and yellow sharps buckets (for waste such as surgical kits, needles, syringes, razors, stitch cutters etc.). • The Operator / Buildings Manager will ensure that all waste collected from the Site of the proposed Development will be reused, recycled or recovered, where possible, with the exception of those waste streams where appropriate facilities are currently not available; and • The Operator / Buildings Manager will ensure that all waste leaving the Site will be transported by suitable permitted contractors and taken to suitably registered, permitted or licensed facilities. These mitigation measures will ensure the waste arising from the proposed Development during the operational phase is dealt with in compliance with the provisions of the Waste Management Act 1996, as amended, associated Regulations, *the Litter Pollution Act 1997*, the *EMR Waste Management Plan 2015 – 2021, Waste Action Plan for a Circular Economy – Waste Management Policy in Ireland* and the DLCC Waste Management (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws 2018. It will also ensure optimum levels of waste reduction, reuse, recycling and recovery are achieved.	

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Mitigation/ Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Material Assets – Built Services (Chapter 19)		
Mitigation		
BS_1	A method statement for all works to be carried out will be prepared by the contractor and agreed with DLRCC prior to commencement of works to outline what measures are to be taken to ensure there is no loss of service during the works.	Construction
BS_2	Dewatering measures should only be employed where necessary.	Construction
BS_3	If concrete mixing is carried out on site, the mixing plant will be sited in a designated area with an impervious surface.	Construction
BS_4	The existing surface drainage channel within the lands that serve adjacent lands will be retained and should.	Construction
BS_5	Construction methods used will comply with the noise and dust requirements as set out in the relevant EIAR chapters to reduce, as much as possible, dust and noise pollution.	Construction
BS_6	Comprehensive traffic management procedures, including the provision of access to all roads, and access/egress points will be prepared and agreed with the Local Authority. These traffic management measures will be implemented at times when traffic disruption may be experienced.	Construction
BS_7	Road sweeping and/or wheel wash facilities will be provided, as required.	Construction
BS_8	All oils/diesel stored on site for construction equipment are to be located in appropriately bunded areas.	Construction
BS_9	Filters and silt traps will be used to prevent rain washing silts and other materials into the surface water network and creating blockages.	Construction
BS_10	All onsite sewers should be tested and surveyed prior to connection to the public sewer to prevent any possibility of ingress of ground water.	Construction
BS_11	All sewers will be inspected and where necessary sealed to ensure that uncontrolled ground water inflow does not occur.	Construction
BS_12	Any leakage from the foul sewer will be cordoned off and the contaminated effluent and soil collected and disposed by licensed contractors.	Construction
BS_13	The contractor will adhere to any specific requirements, required by the local authority when introducing a new watermain connection.	Construction
BS_14	Commissioning of the system to be carried out in accordance with the engineering specifications set out in the drawings and specifications document.	Construction

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BS_15	Provision of Utilities will be carried out in accordance with the recommendations of the relevant statutory bodies (ESB, Gas Networks Ireland, Irish Water, EIR, Virgin, City and County Councils etc.).	Construction
BS_16	The watermain connection to the public system is to be in accordance with the Irish Water requirements to avoid any contamination risk.	Construction
BS_17	SuDS measures on site include green roofs, blue roofs, attenuation tanks/soakaway's, permeable paving and detention basins.	Operational
BS_18	Dual & low flush toilets and water economy outlets will be used to reduce flows from the development.	Operational
BS_19	The site water main system will be metered as directed by the Council to facilitate detection of leakage and the prevention of water loss.	Operational
BS_20	Dual & low flush toilets and water economy outlets will all be considered to reduce the water demand.	Operational