

Appendix 8.1

River Water Quality Details

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Code	09T010800	
Name	Tolka	
Location	D Fgl	
EPA River Code	09T01	\$\$OVERVIEW_MAP\$\$
River Basin District	ERBD	
Hydrometric Area	09	
Catchment Area	Tolka	

Q Value

Most Recent	2001	2002	2003	2004	2005
3		3			3

The presence of pollution causes changes in flora and fauna of rivers. Well documented changes occur in the macroinvertebrate community in the presence of organic pollution: sensitive species are progressively replaced by more tolerant forms as pollution increases. The Q Value system describes the relationship between water quality and the macroinvertebrate community in numerical terms. Q5 waters have high diversity of macroinvertebrates and good water quality, while Q1 have little or no macroinvertebrate diversity and bad water quality. Intermediate values, Q1-2, 2-3, 3-4 etc denote transitional conditions. For more information on the Q-Value system, see Water Quality in Ireland 2001 - 2003, EPA 2005 (go to What we do/Environmental Monitoring/Water/Rivers).

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If you have a query about this mapping tool, contact the Environmental Protection Agency, GIS Unit, Office of Environmental Assessment, PO Box 3000, Johnstown Castle Estate, Co. Wexford. Tel: Locall 1890 33 55 99 or 053 91 60600; Fax 053 91 60699. Email queries should be directed to info@epa.ie for the attention of the GIS Unit.

Code	09T011100	
Name	Tolka	
Location	D Fgl	
EPA River Code	09T01	\$\$OVERVIEW_MAP\$\$
River Basin District	ERBD	
Hydrometric Area	09	
Catchment Area	Tolka	

Q Value

Most Recent	2001	2002	2003	2004	2005
2/0		2-3			2/0

The presence of pollution causes changes in flora and fauna of rivers. Well documented changes occur in the macroinvertebrate community in the presence of organic pollution: sensitive species are progressively replaced by more tolerant forms as pollution increases. The Q Value system describes the relationship between water quality and the macroinvertebrate community in numerical terms. Q5 waters have high diversity of macroinvertebrates and good water quality, while Q1 have little or no macroinvertebrate diversity and bad water quality. Intermediate values, Q1-2, 2-3, 3-4 etc denote transitional conditions. For more information on the Q Value system, see Water Quality in Ireland 2001 - 2003, EPA 2005 (go to What we do/Environmental Monitoring/Water/Rivers).

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Code	09T011000	
Name	Tolka	
Location	D Fgl	
EPA River Code	09T01	\$\$OVERVIEW_MAP\$\$
River Basin District	ERBD	
Hydrometric Area	09	
Catchment Area	Tolka	

Q Value

Most Recent	2001	2002	2003	2004	2005
3		2-3			3

The presence of pollution causes changes in flora and fauna of rivers. Well documented changes occur in the macroinvertebrate community in the presence of organic pollution: sensitive species are progressively replaced by more tolerant forms as pollution increases. The Q Value system describes the relationship between water quality and the macroinvertebrate community in numerical terms. Q5 waters have high diversity of macroinvertebrates and good water quality, while Q1 have little or no macroinvertebrate diversity and bad water quality. Intermediate values, Q1-2, 2-3, 3-4 etc denote transitional conditions. For more information on the Q-Value system, see Water Quality in Ireland 2001 - 2003, EPA 2005 (go to What we do/Environmental Monitoring/Water/Rivers).

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Appendix 9.1

Wind rose for Dublin Airport Synoptic Station

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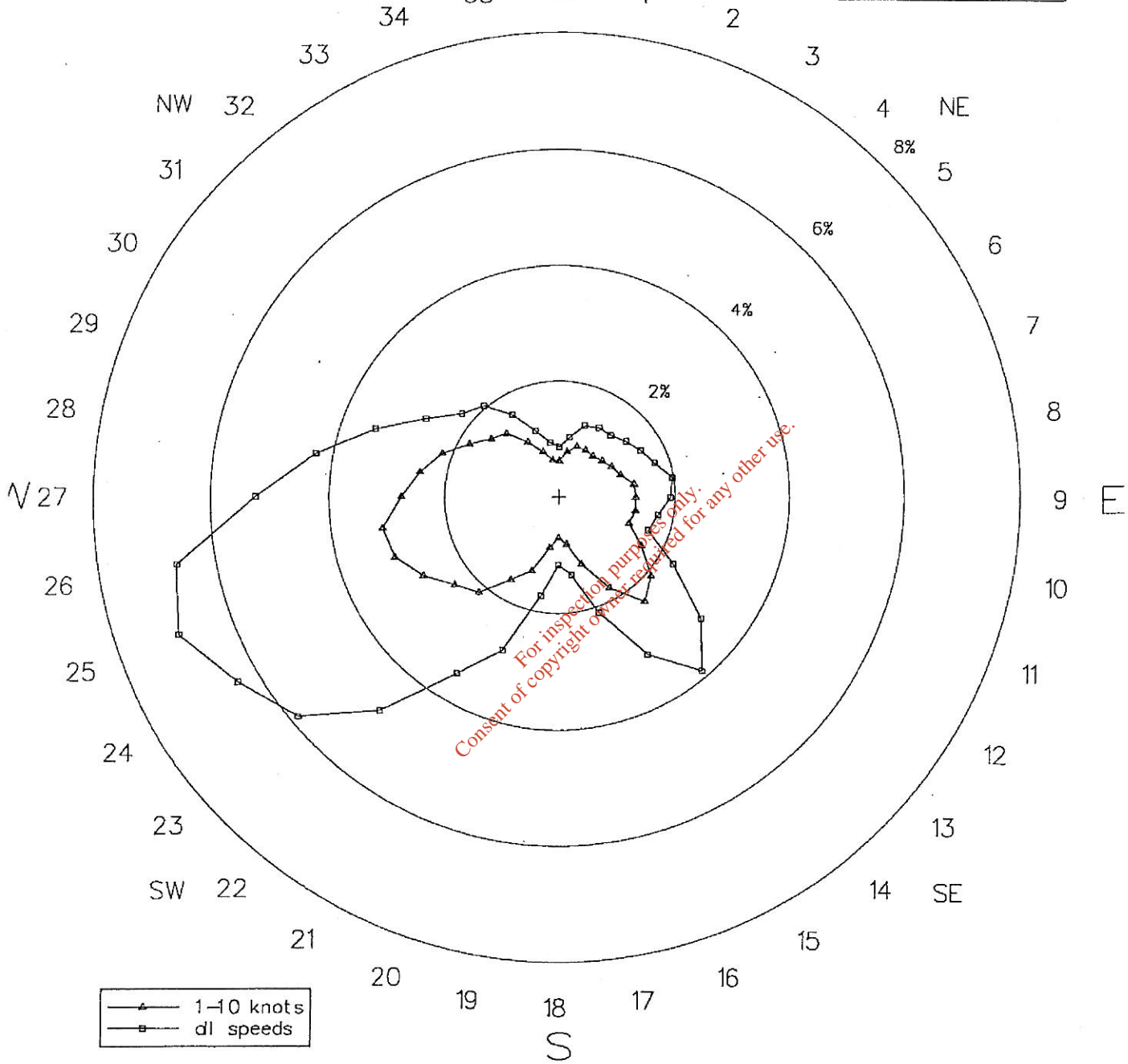
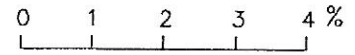
DUBLIN AIRPORT 1970-1999

Percentage Frequency of Occurrence of Wind Directions

Calm: 2.4%

N

Scale: 1% = 1cm



Percentage Frequency of Occurrence of Wind Speeds

+ less than 0.1

0	1-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40	41-47	over 48	knots
2.4	10.3	17.7	27.1	28.3	9.9	3.5	0.6	+	+	0.0	%

mean wind speed: 10.0 knots

standard deviation: 5.9 knots

anemometer height: 12m

Meteorological Service, Glasnevin Hill, Dublin 9.

Appendix 10.1

Alcontrol Laboratories Certificate of Analysis

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CERTIFICATE OF ANALYSIS

Client: Tobin Consulting Engineers (Dublin)
Block 10-3
Blanchardstown Corporate Park
Blanchardstown
Dublin 15
Ireland

Attention: Allison Austin

Date: 4 September, 2007

Our Reference: 07-B05814/01

Your Reference: 4039

Location: BALLYCOOLIN MRF

A total of 2 samples was received for analysis on Monday, 27 August 2007 and authorised on Tuesday, 4 September 2007. Accredited laboratory tests are defined in the log sheet, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation. We are pleased to enclose our final report, it was a pleasure to be of service to you, and we look forward to our continuing association.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Signed

Ken Scally
General Manager, Ireland

Lorraine McNamara
Laboratory Technical Manager

Compiled By

.....
Paul Barry



Alcontrol Laboratories Ireland

Test Schedule

Ref Number: 07-B05814/01

Client: Tobin Consulting Engineers (Dublin)

Date of Receipt: 27/08/2007

Sample Type: DUST

Location: BALLYCOOLIN MRF

Client Contact: Allison Austin

Client Ref: 4039

UKAS Accredited [Testing Laboratory] No. 1291	Detection Method		GRAVIMETRIC	GRAVIMETRIC																
	Sample Identity	Other ID																		P / V
07-B05814-S0023-A01 07-B05814-S0024-A01	D1 D2	27/08/07 27/08/07	Non-Alcohol Glass Jar Non-Alcohol Glass Jar	X X	X X															
Alcontrol Reference	Sample Identity	Other ID	P / V	Inorganic Dust	Organic Dust															

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Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

ALcontrol Laboratories Ireland

Test Schedule Summary

Ref Number: 07-B05814/01 **Sample Type: DUST**
Client: Tobin Consulting Engineers (Dublin) Location: BALLYCOOLIN MRF
Date of Receipt: 27/08/2007 Client Contact: Allison Austin
Client Ref: 4039

* SUBCONTRACTED TO OTHER LABORATORY / ** SAMPLES ANALYSED AT THE CHESTER LABORATORY

SCHEDULE	METHOD	TEST NAME	TOTAL
X	GRAVIMETRIC	Inorganic Dust	2
X	GRAVIMETRIC	Organic Dust	2

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Interim
 Validated

Alcontrol Laboratories Ireland

Table Of Results

Ref Number: 07-B05814/01

Sample Type: DUST

Client: Tobin Consulting Engineers (Dublin)

Location: BALLYCOOLIN MRF

Date of Receipt: 27/08/2007

Client Contact: Allison Austin

(of first sample)

Client Ref: 4039

UKAS Accredited [Testing Laboratory] No. 1291	Detection Method		Other ID	Sample Identity		mg/day/sq_m	
	Method	Detection Limit		Inorganic Dust	Organic Dust	mg/day/sq_m	mg/day/sq_m
	GRAVIMETRIC	<5mg/day/sq_m					
	GRAVIMETRIC	<5mg/day/sq_m					
Alcontrol Reference 07-B05814-S0023 07-B05814-S0024	D1	27/08/07	13	58			
	D2	27/08/07	79	103			

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Notes : METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL.

NDP = NO DETERMINATION POSSIBLE

Checked By : Paul Barry

APPENDIX

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APPENDIX

1. Results are expressed as mg/kg dry weight (dried at 30°C) on all soil analyses except for the following: NRA Leach tests, flash point, and ammoniacal N₂ by the BRE method, VOC, PRO, Cyanide, Acid Soluble Sulphide, SVOC, DRO, PAH, PCB, TPH CWG ,TPH by IR, OFGs and SEM.
2. Samples will be run in duplicate upon request, but an additional charge may be incurred.
3. A sub sample of all samples received will be retained free of charge for one month for soils and one month for waters (sample size permitting), but may then be discarded unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage.
4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
6. When requested, an asbestos screen is done in-house on soils and if no fibres are found will be reported as NFD – no fibres detected. If fibres are detected, then identification and quantification is carried out by ALcontrol Technichem or Alcontrol Shutlers in the UK. If a sample is suspected of containing asbestos, then drying and crushing will be suspended on that sample until the asbestos results are known. If asbestos is present, then no analysis requiring dry sample are undertaken.
7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample – similarly, if a headspace is present in the volatile sample.
8. NDP – No Determination Possible due to insufficient/unsuitable sample.
9. Metals in water are performed on a filtered sample, and therefore represent dissolved metals – total metals must be requested separately.
10. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

Last updated February 2005

Appendix 10.2

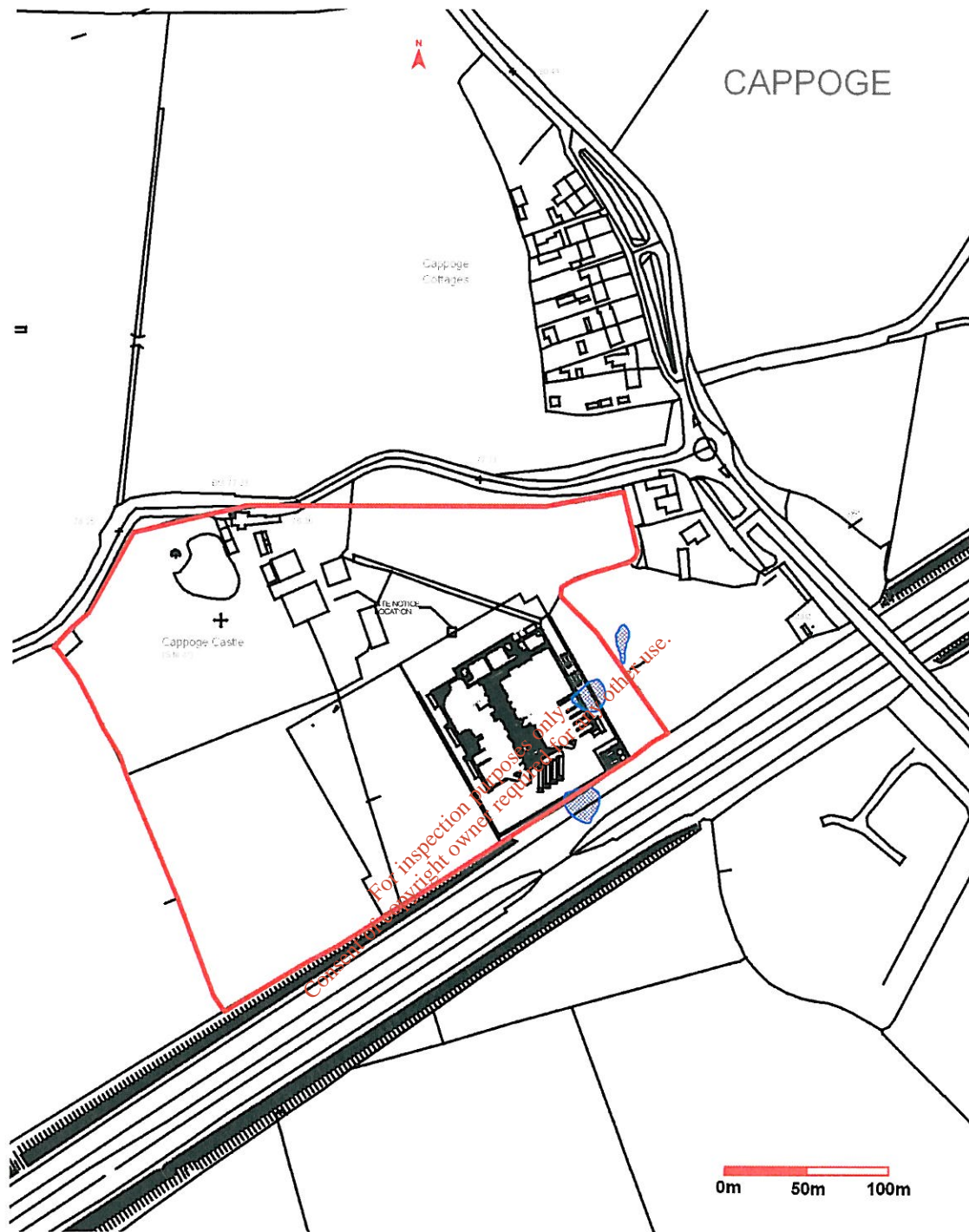
Results of odour dispersion model

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10.2 Odour dispersion modelling plume isopleths



Predicted odour emission contribution of proposed overall proposed MCR Environmental MRF operation with odour abatement protocols implemented to odour plume dispersal for the 98th percentile for an odour concentration of $\leq 0.20 \text{ Ou}_E \text{ m}^{-3}$ () for 3 years of hourly sequential meteorological data from Dublin airport (2004 to 2006 inclusive).



Predicted odour emission contribution of proposed overall proposed MCR Environmental MRF operation with odour abatement protocols implemented to odour plume dispersal for the 99.5th percentile for an odour concentration of $\leq 0.30 \text{ Ou}_E \text{ m}^{-3}$ (—) for 3 years of hourly sequential meteorological data from Dublin airport (2004 to 2006 inclusive).

Appendix 12.1
Trip Generation Assessment

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Ballycoolin Truck Movements

Import of Materials

Construction & Demolition Waste			
Trip type	Tonnes/ trip	tonnes/yr	trips/yr
6 cu. yd.	3.0	16,000	5,333
12 cu.yd	5.0	6,000	1,200
20 cu. yd	8.0	40,000	5,000
35 cu. yd	13.0	18,000	1,385
Subtotal		80,000	12,918
		average payload =	6.2
Commercial & Industrial Waste			
Trip type	Tonnes/ trip	tonnes/yr	trips/yr
Rear End Loader	10	10,000	1,000
Compactors	6	5,000	833
Subtotal C		15,000	1,833
		average payload =	8.2
Bulked Waste from Transfer Stations			
Trip type	Tonnes/ trip	tonnes/yr	trips/yr
Bulk Load	24	0	0
Subtotal C		0	0
Total		95,000	14,751
		average payload =	6.4

Material In	
Total tonnes	95,000
No. of trips	14,751
Trips/week	283.7
Days/week	6
Hrs/day	24
Trips/day	47.3
Trips/hr	1.97

Export of Materials

	Tonnes/ trip	tonnes/yr	trips/yr
Transport of products	20	90,000	4,500
Transport of Residual Waste	20	5,000	250
Total =		95,000	4,750

Material Out	
Total tonnes	95,000
No. of trips	4,750
Trips/week	91.3
Days/week	6
Hrs/day	24
Trips/day	15.2
Trips/hr	0.63

Total Truck Movements	
No. of trips	19,501
Trips/week	375.0
Days/week	6
Hrs/day	24
Trips/day	62.5
Trips/hr	2.60

Ballycoolin Truck Movements

Import of Materials

C&D Waste		With Bulking Station		No Bulking station	
Trip type	Tonnes/ trip	tonnes/yr	trips/yr	tonnes/yr	trips/yr
6 cu. yd.	3.0	20,000	6,667	40,000	13,333
12 cu.yd	5.0	8,000	1,600	16,000	3,200
20 cu. yd	8.0	50,000	6,250	100,000	12,500
35 cu. yd	13.0	22,000	1,692	44,000	3,385
Subtotal		100,000	16,209	200,000	32,418
		average payload =	6.2		
C&I Waste		With Bulking Station		No Bulking station	
Trip type	Tonnes/ trip	tonnes/yr	trips/yr	tonnes/yr	trips/yr
Rear End Loader	10	35,000	3,500	70,000	7,000
Compactors	6	15,000	2,500	30,000	5,000
Subtotal C		50,000	6,000	100,000	12,000
		average payload =	8.3		
Bulked Waste from Transfer Stations					
Trip type	Tonnes/ trip	tonnes/yr	trips/yr	tonnes/yr	trips/yr
Bulk Load	24	150,000	6,250	0	0
Subtotal C		150,000	6,250	0	0
Total		300,000	28,459	300,000	44,418
		average payload =	10.5	average payload =	6.8

With Bulking Station		Without Bulking Station	
Total tonnes	300,000	Total tonnes	300,000
No. of trips	28,459	No. of trips	44,418
Trips/week	547.3	Trips/week	854.2
Days/week	6	Days/week	6
Hrs/day	24	Hrs/day	24
Trips/day	91.2	Trips/day	142.4
Trips/hr	3.80	Trips/hr	5.93

Export of Materials

	Tonnes/ trip	tonnes/yr	trips/yr	tonnes/yr	trips/yr
Transport of products	20	240,000	12,000	240,000	12,000
Transport of Residual Waste	20	60,000	3,000	60,000	3,000
Total =		300,000	15,000	300,000	15,000

With Bulking Station		Without Bulking Station	
Total tonnes	300,000	Total tonnes	300,000
No. of trips	15,000	No. of trips	15,000
Trips/week	288.5	Trips/week	288.5
Days/week	6	Days/week	6
Hrs/day	24	Hrs/day	24
Trips/day	48.1	Trips/day	48.1
Trips/hr	2.00	Trips/hr	2.00

Appendix 12.2
Traffic Calculations

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Appendix 12.2							
Table X.1 Staff Type/Numbers							
		Shift	Operations		Business		Total
			Factory	Office	Office	Drivers	
Phase 1	Morning	5am-3pm	15	5		15	
	Day	8am-6pm			8		
	Night	3pm-1am	12	1	1	15	
	Subtotal 1		27	6	9	30	72
Phase 2	Morning	5am-3pm	36	7		40	
	Day	8am-6pm			20		
	Night	3pm-1am	32	2	2	40	
	Subtotal 2		68	9	22	80	179

Table X.2 Staff Modal Split - Car Usage (vehicles)							
	Phase		Operations		Business		Total
			Factory	Office	Office	Drivers	
			50%	80%	80%	0%	
	Phase 1		13.5	4.8	7.2	0	25.5
	Phase 2		34	7.2	17.6	0	58.8

Table X.3 Staff Car Parking Requirement - Phase 2 (car spaces)							
Phase	Time		Operations		Business		Total
			Factory	Office	Office	Drivers	
Phase 2	5am to 8am		18	5.6	0	0	23.6
	8am to 3pm		18	5.6	16	0	39.6
	3pm to 6pm		16	1.6	17.6	0	35.2
	6pm to 1am		16	1.6	1.6	0	19.2

Table X.4 Staff Vehicle Trip Generation							
Phase	Time		Operations		Business		Total
			Factory	Office	Office	Drivers	
Phase 1 Cars In	4am to 5am		7.5	4	0	0	11.5
	7am to 8am		0	0	6.4	0	6.4
	2pm to 3pm		6	0.8	0.8	0	7.6
Phase 1 Cars Out	3pm to 4pm		7.5	4	0	0	11.5
	6pm to 7pm		0	0	6.4	0	6.4
	1am to 2am		6	0.8	0.8	0	7.6
Phase 2 Cars In	4am to 5am		18	5.6	0	0	23.6
	7am to 8am		0	0	16	0	16
	2pm to 3pm		16	1.6	1.6	0	19.2
Phase 2 Cars Out	3pm to 4pm		18	5.6	0	0	23.6
	6pm to 7pm		0	0	16	0	16
	1am to 2am		16	1.6	1.6	0	19.2

Appendix 14.1

RMP Sites in the vicinity of the Study Area

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Appendix 14.1 - Record of Monuments and Places

The following information was obtained from the Record of Monuments and Places (RMP) manuals and corresponding constraint maps and files held by the Archaeological Survey. The sites, which are invaluable indicators of settlement activity within, and in the immediate vicinity of the proposed development lands, are listed by RMP and the 1:5000 OS series map numbers, by townland, by site type and by national grid reference (presented as a ten-figure co-ordinate that indicates the position or siting of each monument). The RMP number consists of two parts: the number of the six-inch sheet on which the site is located and the number of the individual monument. For example, RMP site 27 on OS six-inch sheet 14 is listed as 014:027 (the RMP sheet relevant to the development lands is sheet 14 of the OS six-inch series, and 3130 of the 1:5000 series). A county code, such as DU for Dublin, is included.

RMP No. DU014:026 **Map No.** 3130
Townland Cappoge
Site Type Ringditch **NGR** 310480 / 239410
Distance This monument is located c. 0.25km from the proposed development site.
Description This site is not marked on any editions of the OS six-inch Maps, but aerial photographs have shown a ringditch approximately 15m in diameter. There is no visible trace of the ringditch on the site.

RMP No. DU014:027 **Map No.** 3130
Townland Cappoge
Site Type Tower house site **NGR** 310640 / 239850
Distance The monument is located c. 0.04km from the proposed development site.
Description This site is marked on various editions of the OS six-inch maps as 'Site of Cappoge Castle'. The site was examined and recorded by the OPW in 1987, when a large quarry was noted immediately north of site. It was also noted that bedrock occurs quite close to surface, and that a number of irregular ridges and small quarry holes now mark the site of the castle. There is no visible trace of a castle on the site. Similarly, there is no local recollection of castle.

RMP No. DU014:028 **Map No.** 3130
Townland Cappoge
Site Type Habitation Site **NRG** 310940/239740
Distance This monument is located c.003km from the proposed development site.

Description The site was discovered during archaeological monitoring of the construction phase of the North Eastern Pipeline for Bord Gáis Éireann (Gowan 1984). The site is of Neolithic or late Stone Age (c.4000-2300 BC) date.

RMP No. DU014:029 **Map No.** 3130
Townland Cappoge
Site Type Mound/Ringfort **NGR** 311430/239780

Distance This monument is located c.0.51km from the proposed development site.

Description The site is marked on all OS six-inch map editions. It is situated on flat land which slopes down to the southwest. It is listed as a raised ringfort in the OPW field reports, but has been variously classified as a mound and as a tumulus. The raised mound or platform is 1m high to the north-northeast and 1.8m high to the south-southwest with a slightly saucer-shaped interior that is deepest across the northern half of the site. There is no indication of a fosse, and the base of the mound is recorded as having been slightly damaged in the past by machinery tracks. The diameter of the base is approximately 34m.

RMP No. DU014:03301 **Map No.** 3130
Townland Cappoge
Site Type Souterrain possible **NGR** 310610 / 238940

Distance This monument is located c.0.66km from the proposed development site.

Description The site is marked on various editions of OS six-inch map editions. It is described as a large irregular mound partly dug away, approximately 90m wide and 20m high.

RMP No. DU014:03302 **Map No.** 3130
Townland Cappoge
Site Type Burial site **NGR** 310610 / 238940

Distance This monument is 0.66km from the proposed development site.

Description No further details on this site are available.

RMP No. DU014:051 **Map No.** 3130
Townland Cappoge
Site Type House site **NGR** 309990 / 239330

Distance This monument is 0.71km from the proposed development site.

Description Investigations in 1988 for Phase 2 of the NE gas pipeline revealed a sub-rectangular soil mark with traces of mortar. No further details are available.

Appendix 14.2
Interim Report (August 2007)

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Interim report

Archaeological monitoring at

Premier Business Park,
on the site of
Cappoge Castle
Dublin 11

License Ref 06E0228

Planning Ref F05A/1363, F07A/0340

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By
Melanie McQuade
Margaret Gowen & Co. Ltd
Job No. 07117-R1

For
Harcourt Developments

29th August 2007

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Illustrations

Figures

Figure 1 Site location

Figure 2 Plan of ditch/moat and other archaeological features shown in relation to the current development (Premier Business Park) and showing Reservation lands for the Metro line and the realignment of Ballycoolin Road

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1 Introduction

- 1.1 This report describes the interim results of Archaeological monitoring carried out on the site of Premier Business Park (Planning Ref F05A/1363, F07A/0340). A statement of the impact of the development on Archaeological features is included.
- 1.2 The development site lies on the southern side of Ballycoolin Road, in the townland of Cappoge, Finglas, Dublin 11 (NGR 31073 23980) (Fig. 1). Two sites are recorded within the development area. These are the site of Cappoge Castle (RMP DU014:027) at the northern end of the development area and part of the constraint circle of an excavated Neolithic settlement (RMP DU014-028) at the southeast end of the development (Fig. 1).
- 1.3 Prior to development an archaeological assessment was undertaken on the site (Leigh and Myles 2006). The assessment included a geophysical survey (06-R034) and the excavation of test trenches (06E0228).
- 1.4 No traces of the castle (RMP DU014:027) were identified during the assessment and it was recommended that further testing and/or archaeological monitoring of site development works should be undertaken.
- 1.5 Archaeological monitoring commenced in June 2007 under license to Franc Myles (06E0228 ext) and the license was subsequently transferred to Melanie McQuade who carried out further monitoring in July 2007.
- 1.6 Monitoring has been carried out according to the programme of earth-moving works and a large portion of the site still has to be stripped of topsoil (Fig. 2). During the course of monitoring to date a human skeleton, a substantial L-shaped ditch, and another large curvilinear ditch were uncovered as well as a series of smaller medieval ditches and gullies and a series of what are probably cooking pits that may date to the prehistoric period (Fig. 2).
- 1.7 The large L-shaped ditch was uncovered in the area to the east of the recorded site of the castle (RMP DU014:027) (Fig. 2). In the author's opinion the portion of the L-shaped

ditch uncovered could represent the eastern and northern arms of what may have been a rectangular moated site. A substantial curvilinear ditch was uncovered to the south of this. It did not join the L-shaped ditch (Fig. 2) and may be part of another enclosure.

- 1.8 The exposed portion of the moat lies within lands to be developed by three separate parties. The southern portion of the L-shaped ditch or moat lies within Harcourt Developments' Premier Business Park (Planning Ref F05A/1363; F07A/0340). The moat then runs northwards through one of the proposed routes for the Metro and north of this it falls within the realignment corridor of Ballycoolin Road (Fingal County Council) (Fig. 2).
- 1.9 The planned works within the Business Park will have a direct impact on the southern end (7m) of the L-shaped ditch or moat, the curvilinear ditch and several pit features.
- 1.10 The realignment of Ballycoolin Road will have a direct impact on the exposed section of the northern arm of the L-shaped ditch (19m) and there is a possibility that more of the ditch or related features will be exposed along the road corridor. Should the Metro be routed along the reservation area it will undoubtedly impact on the section of the L-shaped ditch and any other features which fall within its path. A mitigation strategy for the impacts of these developments on the archaeological features will need to be agreed with the National Monuments Section DoEHLG and the National Museum of Ireland.

2 The Results of Monitoring to date

2.1 The sequence of archaeological monitoring has been led by the development programme, with work commencing on the northeast of the site and progressing to the southeast. A series of archaeological features has been uncovered to date and the author has advised the developer that the remainder of the site should be stripped of topsoil as a priority so that any further archaeological remains can be identified and an appropriate mitigation strategy be agreed in advance of construction works there. Monitoring is therefore continuing on site. To date a human skeleton, a substantial L-shaped ditch or moat, a series of smaller medieval ditches, gullies and an undated curvilinear ditch as well as a several pits, potentially prehistoric in date, have been uncovered (Fig. 2).

2.2 *The skeletal remains*

An isolated skeleton was uncovered on the north of the site, to the west of the L-shaped ditch or moat. The relevant authorities were informed of the discovery. Topsoil removal in the area around the skeletal remains was monitored and further investigations were carried out by a team of archaeologists. No further human remains were identified.

The skeletal remains were disturbed slightly from their original deposition but did not appear to represent a formal Christian burial since no clear grave cut was identified. The remains were archaeologically excavated according to a revised method statement (16th July 2007). The details of the burial and analysis of the human remains will be presented in the final report for license 06E0228.

2.3 *Substantial L-shaped ditch/ Moat*

The large L-shaped ditch exposed on this site, to the west of the burial, probably represents the eastern arm and part of the northern arm of a rectangular moated enclosure which may have occupied the site prior to the construction of Cappoge Castle (RMP DU014:027) (Fig. 2). The eastern arm of the ditch stretches for 53m (north-south) and 19.50m of the northern ditch has been uncovered. The latter may extend further westwards beyond the present limit of excavation.

Despite monitoring of site clearance works, in the surroundings no evidence has been uncovered for the southern or western arms of such an enclosure. Nor was there any evidence for a bank associated with the exposed portion of the ditch. The top of the ditch has a maximum width of 4m. Sections excavated into each arm of the ditch show that it has a U-shaped profile and a depth of 1.60m has been recorded. Three different fills have been recorded within the ditch. The lower fill is an organic waterlogged material which suggests that the ditch originally held water, possibly functioning as a moat around the castle site. Medieval pottery sherds have been recovered from each of these fills indicating a 13th-14th century date for the ditch.

2.4 *Field ditches, gullies and furrows*

A series of smaller linear ditches and gullies were exposed to the east of the L-shaped ditch (or moat). Sections have been hand excavated through these ditches and ceramic finds have enabled dating. Some of the ditches and furrows proved to be post-medieval in date while medieval (Late 12th -14th century) pottery was recovered from others. These ditches and gullies have all been planned, photographed and recorded. They will be detailed in the final report prepared for work carried out on this site under license 06E0228.

2.5 *Curvilinear ditch*

A large curvilinear ditch was uncovered to the south of the L-shaped ditch or moat. The ditch measured 5.00m in average width and was orientated roughly northwest- southeast (Fig. 2). A section was excavated into the ditch and found it was 1.30m in depth. No finds were recovered from this section of the ditch and consequently its date has not been determined.

2.6 *Cooking pits*

Twelve pits and a small linear trench have been uncovered in an area to the south of the curvilinear ditch (Fig.2). The pits range from 0.80m to 3.00m in diameter and some of them appear to have been cut by the ditch. Sections have been hand excavated into a sample of the pits which range in depth of between 150mm to 300mm. A piece of burnt flint was uncovered during the excavation of one of the sections and indicates a prehistoric date for these pits. There was a high charcoal content within the fills of these

features which suggest that they may have been used for cooking or industrial activity. The linear trench may represent foundation remains and is probably associated with the cooking pits. These features were identified between 75.80m and 76mOD.

Topsoil stripping is on-going on the south of the site and a small area on the northwest still remains to be stripped (Fig. 2). These works will be monitored and any further significant discoveries will be advised to the DoEHLG and the Museum.

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3 Impact Statement

3.1 *The L-shaped ditch or moated enclosure*

The northern arm of the L-shaped ditch or moat (19.50m of which is currently exposed) and the northern extent (12m) of the eastern arm lie on lands immediately to the north of the present development area (Fig. 2). The northern arm of the L-shaped ditch is within the planned realignment corridor for Ballycoolin Road. The northern extent of the eastern arm runs through the area reserved for one of the proposed routes of the Metro (Fig. 2). The southern part (30m) of the ditch or moat falls within the present development area of the Premier Business Park. The top of the ditch or moat lies between 75.10m – 75.90m OD.

3.2 *Premier Business Park*

Much (23m) of the part of the ditch which lies within the Business Park is located to the north and east of Block H (Fig. 2). No further ground reduction is needed at this location and it is planned to fill this area with approximately 1.45m of topsoil which will achieve a finished level of *c.* 77.35m OD. This methodology could enable preservation *in situ* of this portion of the ditch if it was covered by terram and topsoil, provided there was minimal compaction of the fill material placed over the ditch.

The remaining 7m at the southern end of the ditch falls within the footprint of Block H (Fig. 2). Ground reduction within the footprint area will be to a level of 75.85m OD. This would entail the removal of 1.12m of the fill of the ditch/moat. In order for the proposed development to proceed as planned it would be necessary for the length of the ditch within the footprint area to be archaeologically excavated and recorded so that the ditch could be preserved by record. During the archaeological monitoring/ testing phase of works on site a section (4m long) was excavated into this stretch of the ditch in order to determine its true nature and extent. It is likely that the National Monuments Section, DoEHLG will recommend that the ditch be preserved by record. This would require that the part of the ditch that falls within the footprint of the building would need to be fully excavated and recorded by a team of archaeologists in advance of construction works commencing there.

3.3 *Lands Reserved for the Metro*

Should the lands presently reserved for the Metro be selected as the preferred route construction works will directly impact on the 12m of the L-shaped ditch/moat at this location (Fig. 2). It is also likely that other related features may be located within the rail corridor. Should the Metro be constructed at this location a methodology will need to be agreed with the apposite authorities (the National Monuments Section, DoEHLG and the National Museum of Ireland) in order to establish a suitable mitigation strategy for any such archaeological features within the rail corridor. Ultimately this will entail either preservation *in situ* or preservation by record. Given the likely impact of the construction of a railway it is probable that the latter option will be required. That would be achieved by means of archaeological excavation.

3.4 *Ballycoolin Road realignment*

The realignment of Ballycoolin Road is to be carried out by Fingal County Council as a Section 8 Development. Works are due to commence within the next 8 months. The construction of the road will directly impact on the 19.50m of the moat presently exposed (Fig. 2) and there is a possibility that a further stretch of the moat and/or other related features could exist within the road corridor. Fingal County Council has been advised of the location of the moat and of the likelihood that further archaeological remains could be found within the road take. The Council has been advised to engage an archaeologist in order to carry out testing so as to determine the nature and extent of any such archaeological features within the road corridor. A mitigation strategy for such features will need to be agreed with the National Monuments Section, DoEHLG and the National Museum of Ireland. It is more than likely that archaeological excavation of such features will be required in order to facilitate their preservation by record prior to the construction of the road.

3.5 *Medieval cultivation ditches and gullies*

A series of linear ditches and gullies uncovered on the northeast end of the development were located within the footprint of Block H. The tops of these features lay between 75.80m and 76.20m O.D. They ranged between 150mm and 300mm in average depth. The required depth of excavation within this footprint is 75.58m O.D which would necessitate the excavation of the features. The ditches and gullies within the development area have been fully recorded and will be detailed in the final report to be issued for

license 06E0228. It is highly likely that similar features of medieval date exist in the area of land to the north and northeast of the Business Park which is currently reserved as one of the proposed routes for the Metro (Fig. 2). Should this be chosen as the preferred route for the Metro then due consideration will need to be given for either preservation *in situ* or preservation by record of such features.

3.6 *Curvilinear enclosure ditch*

This ditch lies within the footprint of Block G and the carpark area between Blocks G and H. The curvature of the ditch may suggest that it could be part of an enclosure. The top of the ditch is between 76.10m and 75.78m OD. The depth of excavation required for the construction of Block G requires excavation to a depth of 76.13m O.D and the foundations of the car park require excavation to a depth of 75.85m. Construction of the car park will have a direct impact on the ditch and in this location it could be preserved by record i.e. by means of archaeological excavation.

3.7 *Prehistoric pits*

These twelve pits lie within the footprint of Block G and the car park area between blocks G and H (Fig. 2). The top of the pits lie at between 75.80m and 76.00m OD. The pits range in depth between 150mm and 300mm. The depth of excavation required for the construction of Block G requires excavation to a depth of 76.13m O.D and the foundations of the car park require excavation to a depth of 75.85m OD. Therefore the construction of the car park will have an impact on the features located within that area (Fig. 2). Those within the footprint of Block G could be preserved *in situ*.

4 Summary

- 4.1 A series of archaeological features have been identified during monitoring of topsoil stripping on the site of Premier Business Park, Cappoge, Dublin 11. Monitoring is ongoing and it is likely that further features could be uncovered.
- 4.2 An L-shaped ditch with a waterlogged fill was uncovered to the east of the site of Cappoge Castle (RMP DU014:027). This may be the remains of a moated site.
- 4.3 A series of medieval ditches and gullies were recorded to the east of the moat. An isolated inhumation burial was excavated to the west of the moat. These features have been fully resolved and will be detailed in the final report on 06E0228.
- 4.4 A large curvilinear ditch to the south of the moat may be part of an enclosure. The date of this feature has not been established.
- 4.5 A series of pits to the south of this ditch appear to be prehistoric in date.
- 4.6 Development of Premier Business Park (Planning Ref F05A/1363, F07A/0340) will impact on part of the L-shaped ditch (7m), the curvilinear ditch and several of the pits. These will need to be preserved by record. Preservation *in situ* may be possible for part of the moat (30m) and several pits located outside the carpark areas and the footprint of the buildings (Fig.2).
- 4.7 Part of the L-shaped ditch or moat (19.50m) lies within the realignment of Ballycoolin road and will probably require preservation by record. Another part of this ditch or moat lies within land reserved for the Metro. Should this route be selected this part of the moat will probably also require preservation by record. Preservation by record is achieved through archaeological excavation.

- 4.8 Any recommendations made in this report are subject to approval from the National Monuments Section, Department of the Environment, Heritage and Local Government and the National Museum of Ireland.

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References

Leigh, J. and Myles, F. 2006. Geophysical survey and archaeological assessment proposed Abbotstown Business Park, Cappoge, Dublin 11. Archaeological Licence Ref. 06E0228, Geophysical Licence Ref. 06R034, Planning Register No. F05A/1363. Unpublished report prepared by Margaret Gowen & Co. Ltd.

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Appendix 14.3

Topographical finds in the vicinity of the Study Area

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Appendix 14.3 Topographical Files

The topographical files in the National Museum of Ireland were consulted to determine if any archaeological artefacts had been recorded from the area. This is the National archive of all known finds recorded by the National Museum. It relates primarily to artefacts but also includes references to monuments and has a unique archive of records of previous excavations. A list of recorded finds from the area is given below.

Townland Dunsink
Reg. No. 1998:90
Finds Pottery
Description Found in Dunsink tiphead. Rim and handle fragment of glazed vessel, Dublin -type ware. Rather broad strap handle, decorated with five parallel lines.

Townland Dunsink
Reg. No. 1930:534
Finds Roman coin:Consantinus Magnus
Description Copper coin

Townland Dunsink
Reg. No. None
Finds Various items including 2 hammerstones, several sherds glazed and unglazed pots, pottery, Sgraffito ware, small bronze cone, iron wedge, several bone buttons, halfpenny George II 1753, pieces of delf, pieces of clay pipe and glassware.
Description Discovered at an earthwork and underground rockcut passage monument. The sherd of Bronze Age food vessel and cremated bone are evidence that there was a prehistoric burial place on the summit of this hill. There may also have been a habitation site in this area. The medieval pottery of 13/14 century date is represented by a number of vessels suggesting fairly constant occupation. The Sgraffito and North Devon wares indicate some activity in the 17th Century but more objects are representative of the 18th century. There are no traces of any structures in the area.

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