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1.0 INTRODUCTION

1.1 General

Golder Associates Ireland (Golder) was appointed in August 2007 as Consultants to Cemex (ROI) Ltd. (the “Applicant”), to prepare a Planning and Waste Licence Application for the continued restoration of the worked out sand and gravel pit at Walshestown, Co. Kildare (the “Application Site”).

The location of the proposed Application Site is shown in a regional context on Figure 1.1. Figure 1.2 depicts the Site in the context of the adjoining Punchestown Racecourse, which was identified at the outset of the Restoration Plan as the principal stakeholder, which led to detailed communications throughout the design of this Plan. Figure 1.3 shows the location of the Application Site in the local context (aerial photograph), and shows the Punchestown Racecourse and Complex to the west and north of the Application Site.

The Application Site is located within the townlands of Walshestown, Tipperkevin, Bawnogue and Blackhall (Figure 1.2). It is important to note that unless properly managed the existing worked out sand and gravel pit will continue to have an impact on the general landscape character in the vicinity of the Site, and will remain a potential health and safety concern unless fully properly restored.

1.2 Principal Objective of Restoration Plan

The principal objective of this application is to fulfil a specific objective of the Kildare County Development Plan 2005 to 2011, which states that rehabilitation clauses are essential for any further planning permissions for the Walshestown Pits (Pit No. 9, Pg 215 of Development Plan).

Restoration activities have been ongoing at the Site under previous planning permissions, and more recently under Waste Permit Register No. 71/2002 (Appendix 1.1). In order to continue the restoration activities, the Applicant (formerly Readymix PLC) submitted a Waste Permit Renewal Application in June 2006. In response to this June 2006 application (WPR 236/2006), Kildare Co. Council (KCC) issued a letter to the Applicant on 27 July 2007 (Appendix 1.2), which stated the following:

“..due to the nature and scale of the activity proposed a Waste Licence under the Waste Management Acts 1996 -2005 would be required.”

It is important to state that, in order to continue the restoration activities pending the outcome of a decision from both KCC for the Planning Application and the EPA for the Waste Licence Application, a temporary Waste Permit was issued to the Applicant on 23 July 2008 (Appendix 1.3).

A strategic and key element of the overall conceptual design of the Restoration Plan is to return the Application Site to its former landscape character, i.e. Eastern Kildare Uplands Transition. Furthermore, the Restoration Plan for the Application Site includes the creation of a walkway linking the historical Pilgrim's Walk with Punchestown Racecourse, which is also highlighted in the Strategic Objective for Walshestown Pit (Kildare County Development Plan, 2005-2011).

1.3 Aim and Structure of EIS

This EIS presents the results of an environmental impact assessment (EIA) on the proposed restoration of the Walshestown Pit, which includes provisions for fully restored species-rich grasslands, hedgerows and treelines. The Site will also be accessible along the western edge as a public pathway, continuing an historical Pilgrim's Walk. The proposed development is for the purpose of accepting inert waste materials only. A detailed description of the wastes to be used in the Restoration Plan is contained in Section 7.0.

The EIS follows the grouped format proposed in the EPA document entitled - *Guidelines on the information to be contained in Environmental Impact Statements* (EPA, 2002) - and is divided as follows:

- Non-Technical Summary
- Volume I - Main Text
- Volume II - Appendices

This volume, Volume I - the main text, is structured as follows:

- Section 1 forms an introduction by briefly describing the background to the project and the proposed works at the Application Site;
- Section 2 outlines the Approval requirements for this development;
- Section 3 provides an outline of the EIA process;
- Section 4 presents the need for the project and a review of the alternatives considered;
- Section 5 describes the public consultation and scoping that has been undertaken to date;
- Section 6 presents, in brief, the setting of the Application Site;
- Section 7 describes the character of the wastes to be used for restoration purposes;
- Section 8 presents a description of the preliminary design of the proposed inert Facility and ancillary works, the physical characteristics of the project, and matters relating to construction, operation, management and closure of the proposed Facility; and
- Sections 9 to 20 describe the aspects of the environment (including all of those listed in the Regulations) that could be affected by the proposed development, the potential impacts of the proposed development, measures to mitigate adverse impacts and the

residual impacts of the project following implementation of the mitigation measures. These sections are organised in the following sequence: Human Beings and Traffic; Flora and Fauna; Soils and Geology; Water; Climate; Air; Noise; Landscape and Visual Impact; Material Assets; Cultural Heritage and Archaeology; Environmental Monitoring and Aftercare Management Plan; and Inter-relationships between these factors;

In addition a number of Figures, Tables and Charts which are included within the body of the text provide supporting information to the EIS.

1.4 Background to the Applicant, Cemex (ROI) Ltd.

The Application Site is owned by Readymix plc, now trading under CEMEX (ROI) Ltd. CEMEX Ireland was founded in Dublin in 1965. Initially called Readymix (Eire) Ltd, the company grew almost immediately and by the early 1970s, the group had expanded into aggregates in Dublin and opened concrete operations in Limerick and Waterford.

In 1972 the company was quoted as Readymix plc on the Irish Stock Exchange and since then has gained an excellent reputation and is now a major supplier to the construction industry throughout the island of Ireland. By the mid-1990s, CEMEX Ireland acquired the Catherwood Group of Companies in Northern Ireland which enhanced their range of products and provided strategically placed supply locations for their customers across the island of Ireland.

CEMEX Ireland continued to grow and in 1999 acquired the Finlay concrete products group which expanded and complimented the services and products available to its customers.

Having grown considerably since the 1960s, the company has built an impeccable reputation within the construction industry. CEMEX Ireland is one of the largest and most successful building materials groups in Ireland.

On 1 March 2005 CEMEX acquired the majority shareholding of Readymix plc. CEMEX is a growing global building-solutions company that produces, distributes, and markets cement, ready-mix concrete, aggregates, and related building materials to customers and communities in more than 50 countries.

To protect the environment and communities in which they operate, CEMEX comply fully with high national and international environmental standards by using raw materials which are sympathetically sourced. CEMEX (ROI) Ltd operates their locations in accordance with an in-house Environmental Management System (EMS).

1.5 Cemex (ROI) Ltd. Environmental Policy

The representative organisation for the concrete products and aggregate industries in Ireland is the Irish Concrete Federation (ICF). In 1996 the ICF introduced a voluntary code of

practice for the aggregates and concrete products industries for use and application by its members. This Code has since been updated and the second edition was published in October 2005. The Code was ratified by the Minister for the Environment and embodies ICF members' commitment to good environmental management with responsibility to the environment and local communities. CEMEX (ROI) Ltd is a member of the ICF and operates within the parameters of their Environmental Code of Practice.

CEMEX (ROI) Ltd will actively pursue the objectives of the Code by:-

- Operating an Environmental Management System (EMS) to assist in the implementation of this policy;
- Setting, monitoring and reviewing environmental objectives and targets;
- Making available the required financial resources to operate this policy in accordance with Best Available Techniques (BAT) principles; and
- Recognising that the successful implementation of this policy depends on the ongoing commitment for all those working in the organisation, including all employees and all contractors.

The restoration plan for Walshestown is intended to fulfil their environmental policy and return the lands back to amenity use for the benefit of the public in the vicinity of the Site.

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2.0 APPROVAL REQUIREMENTS

2.1 Requirement for an EIS

Environmental Impact Assessment (EIA) is a process for anticipating the effects on the environment caused by a proposed development or project at a particular site. Where effects are unacceptable, then design or other measures can be taken to avoid or reduce these to acceptable levels. The Environmental Impact Statement (EIS) is a document produced in the course of this process. EIA requirements are derived from EC Directive 85/337/EEC (as amended by Directive 97/11/EC) on the assessment of the effect of certain public and private projects on the environment.

In accordance with Section 176 of the Planning Act the Minister for the Environment Heritage and Local Government may, in connection with the Council Directive 85/337/EEC as amended by Council Directive No. 97/11/EC, make regulations that:

- (a) development which may have significant effects on the environment be identified; and
- (b) the manner in which the likelihood that such development would have significant effects on the environment be specified.

Article 93 of the Planning Regulations (S.I. No. 600 of 2001) indicates that the prescribed classes of development for the purpose of Section 176 of the Planning Act are set out in Schedule 5 of the Planning Regulations. The classes of development and thresholds indicated in Schedule 5 have been implemented into Irish law from the prescribed class listed in Annex I and Annex II of the EIA Directive.

In the case of this project, Part 2 Class 11(b) of Schedule 5 refers to “*Installations for the disposal of waste with an annual intake greater than 25,000 tonnes not included in Part 1 of this Schedule*”. Since it is expected that there will be more than 25,000 tonnes of inert materials accepted at the Facility in a year, the development of the restoration plan falls under this Class requiring an EIS.

Furthermore the Waste Management (Licensing) Regulations 2004, Article 13(1) requires a Waste Licence Application to be accompanied by an EIS if it is of a class specified under Article 93 of the Planning and Development Regulations 2001 to 2006.

The 1992 EPA Act (Section 72) also provides for the preparation by the EPA of Guidelines on the information to be contained in an EIS. The Act further provides that those preparing EIS shall have regard to such guidelines. These guidelines were published in 2002 following extensive consultation and some years experience with the draft guidelines. Additionally, the EPA published in 2003 Advice Notes on Current Practice (in the preparation of EIS) to accompany the guidelines.

2.2 Planning Approval Requirements

Generally, planning permission is required for any development of land or property, unless the development is specifically exempted from this requirement. The term 'development' includes the carrying out of works (building, demolition, alteration) on land or buildings, that is significant, and the change of use of land or buildings.

In the case of the Restoration of the Walshestown Site, over 15 planning permissions relating to sand and gravel extraction and related activities have previously been granted by Kildare Co. Council/An Bórd Pleanála, the first of which was granted in 1969. It is important to note that many of these permissions envisaged restoration, which are applicable for this proposed development. However, as many of these permissions are written in piecemeal fashion, and relate to specific parcels of lands in differing townlands, it was considered prudent to capture the restoration works under one 'catch-all' permission, which is the subject of this Application. Section 4.0 of the EIS provides further details on the existing permissions for the Application Site.

Copies of relevant Planning permissions relating to the Application Site are included in Appendix 2, namely Planning Permission Reference No.s 69/8359, 340/76 and 96/100

2.2.1 Pre-Planning Meeting with Kildare County Council

A pre-planning meeting was held between Kildare Co. Council (KCC), Cemex (ROI) Ltd. and Golder on 4 September 2008. The following people attended the meeting:

- John La Hart (KCC);
- Anita Sweeney (KCC);
- Martin Dowling (KCC);
- Pierce Power (Cemex);
- Geoff Parker (Golder); and
- Conor Wall (Golder).

During this meeting, it was agreed by all parties that the proposed restoration works required planning permission to cover all aspects of the development. Further details of requests raised by KCC during this meeting are included in Section 5.3.1.

2.3 Waste Permit and License Approval

A Waste Permit for the Site was granted in 2002 (WPR 71/2002) for acceptance of inert materials, and this restoration activity continued during the permitted period. A copy of this Permit is included in Appendix 1.1.

In June 2006 an application for renewal of this Permit was submitted to KCC. On 27 July 2007, KCC requested that the Applicant submit a Waste Licence Application (Appendix 1.2).

Following ongoing communications with KCC, a temporary waste permit was issued to the Applicant on 23 July 2008, pending the outcome of the waste licence application for the Site. A copy of the current waste permit for the Site is included in Appendix 1.3 (WPR 236/2006).

Most notably, on 31 October 2008, the EPA instructed the Applicant to submit a Waste Licence Application (Appendix 1.4). It is the intention of the Application to meet this request from the Agency by submitting both a Planning Application and Waste Licence Application.

The preparation of this EIS is to accompany both the Waste Licence and Planning Applications, to be submitted to the EPA and KCC respectively.

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3.0 THE EIA PROCESS

3.1 The Process

The EIA process for the proposed Restoration of Walshestown Pit includes the following steps:

- Identify Project Scope;
- Identify Need;
- Assess Alternatives;
- Stakeholder Engagement;
- Define baseline conditions in which Project will be developed;
- Define/describe Project in sufficient detail to allow assessment;
- Predict the potential impact of the development during construction operation and post closure;
- Identify mitigation strategies;
- Predict residual impacts; and
- Develop an Environmental Management Monitoring Programme.

3.2 Assessment Methodology

Environmental impacts of the proposed restoration of the Walshestown Site were predicted for each environmental aspect (e.g. surface water, groundwater, air, flora and fauna). This involved comparing baseline environmental information with predicted environmental conditions during the restoration works and post-restoration on the Application Site. Environmental impacts were predicted based on their effect on the receiving environment.

The environmental impact assessment process followed EPA Guidelines on information to be contained in an Environmental Impact Statement (EPA, 2002) and Advice Notes on current Good Practice in Preparation of Environmental Impact Statements (EPA, 2003) and was carried out in accordance with standard practice for such work.

This EIS addresses the proposed developments at the Application Site with respect to the following aspects of the environment:

Human beings and Traffic; Flora and fauna; Climate; Air; Noise; Soils and geology; Water; Landscape and Visual; Materials assets, including archaeological heritage and cultural heritage; and Inter-relationships between the above factors.

The EIA was based on desk-top studies, walk-over surveys, and non-intrusive and intrusive investigations including a variety of drilling techniques. The impact assessment was structured to enable a description of the existing environment, assessment of the potential

impacts on the environment, identification of mitigation measures and finally a prediction of the likely significant effects.

3.3 Data Required to Identify and Assess the Main Effects

In accordance with Schedule 6 of the Planning Regulations the data required to identify and assess the main effects must be presented in the EIS.

The data necessary to identify and assess the environmental effects of the development are:

- The characteristics of the development including its physical dimensions, volumes, rates of intake, nature of materials being accepted, and the appearance and condition of the site;
- The existing/receiving environment, emissions and mitigation measures; and
- The proposed monitoring plan.

In this regard, specified information was already available to the Applicant and its consultants, or was obtained through previously commissioned surveys/investigations and more recent Site investigations carried out by Golder Associates between June 2007 and August 2008. The appropriate data are presented in the relevant sections of the EIS.

3.4 Forecasting Methods Used to Assess any Effects on the Environment

In accordance with Schedule 6 of the Planning Regulations the forecasting methods used to assess the effects on the environment are to be contained in the EIS. In this case, professional judgements, based on Site reconnaissance, desk-top studies and calculations, were used to assess effects on the environment.

3.5 Difficulties Encountered During the Assessment

In accordance with Schedule 6 of the Planning Regulations the difficulties encountered during the assessment are to be identified in the EIS. In this instance no significant difficulties were encountered.

3.6 Cumulative Impacts

It is considered that cumulative refers to the “growth in amount or strength” – in this case the impact of restoration activities at the Application Site for a defined period (i.e. 15 years total), on the surrounding environs. As this development is a restoration plan, designed to improve the existing environmental conditions (including landscape, air quality, and future amenity value), it is expected that the cumulative impacts will be positive in the long term. By restoring the Site, in accordance with the Strategic Objective of the KCC Development Plan (pg 215, Pit No. 9), the environmental setting will improve with time. It is noted that certain

impacts will be present for the short to medium term e.g. traffic, however the long term cumulative impacts will be positive. Cumulative effects where relevant are considered in each section of the EIS.

Notwithstanding the above, a planning search of the Application Site and the surrounding area (within a 1.0 km radius) was conducted by using the EPA website and local authority in-house planning search system (August 2008). This search found that there are 2 no. developments within 1.0 km of the Application Site which would be of a size or nature that would need to be considered, in terms of cumulative impacts. Figure 3.1 depicts the location of these two developments in the context of Walshestown Pit (Application Site) and details of these developments are provided below:

1. A search of the EPA records has highlighted that Behan's Land Restoration Ltd. is currently undertaking restoration activities, at their lands adjoining, and to the north-east of, the Application Site, under a temporary waste permit similar to the waste permit attached in Appendix 1.3. A licence application has also been submitted in June 2008 for the restoration of these lands using inert materials, under EPA Reference No. W0247-01, and remains in the licensing system at the time of print; and
2. A second application is currently before An Bórd Pleanála for the continuance of use of existing quarry workings (P.Ref.01/2270, Pl.09.130209.) comprising extraction of sand and gravel (on ca. 27 ha), washing, crushing and screening, silt lagoons, overburden storage and site access. The Applicant is CPI Ltd. and the planning application was lodged on 17 January 2008, and remains in the planning system at the time of print.

As both of these developments were in operation when the various baseline studies were undertaken at the Application Site, the cumulative effect of these activities have been taken into account. In particular, Traffic was considered to be the primary cumulative consideration, and the detailed Traffic and Transport Assessment (TTA) presented in Section 9.0 deals with this issue.

3.7 EIS Team

The companies involved in the EIA and the preparation of this EIS are included in Table 3.1 below.

Table 3.1 EIS Team Members

Subjects	Team Member
Introduction / Approval Requirements / EIA Process / Need for Project / Public Consultation	Golder Associates Ireland
Site Setting / Project Description / Design	Golder Associates Ireland
Human Environment	Golder Associates Ireland
Traffic and Roads Assessment	PMCE Ltd
Flora and Fauna	Golder Associates Ireland
Climate	Golder Associates Ireland
Air Quality	Golder Associates Ireland
Noise	Golder Associates Ireland and Golder Associates (UK) Ltd
Soils and Geology	Golder Associates Ireland
Water	Golder Associates Ireland and Golder Associates (UK) Ltd
Landscape and Visual Impact	Golder Associates (UK) Ltd (Landscape Architect) & Golder Associates Ireland
Archaeology & Cultural Heritage	Dr. Charles Mount, Irish Concrete Federation (ICF)
Material Assets	Golder Associates Ireland
Interactions	Golder Associates Ireland

3.8 Information to be Contained in an EIS

The information to be contained in an EIS is specified in Schedule 6 of SI No. 600 of 2001. The location of this information within the EIS is identified in Table 3.2.

Table 3.2 EIS Check List

S.I. No. 600 of 2001		Schedule 6 Items (abbreviated)	Location in EIS	
1.	(a)	Description of Proposed Development	Sections 1.0 and 8.0	
	(b)	Description of Mitigation Measures	Sections 9.0 to 18.0	
	(c)	Data Required to Identify and Assess Effects	Sections 9.0 to 18.0	
	(d)	Outline of the Main Alternatives Studied	Section 4.6	
2.	(a)	(i) Description of Physical Characteristics of the Development and Land Use Requirements	Section 8.1 to 8.8 and Figures	
		(ii) Description of the Main Characteristics of the Production Process and quantity of materials used	Section 7.0	
		(iii) Estimates, by Type and Quantity of Expected Residues and Emissions	Sections 8.0 to 18.0	
	(b)	Description of the Aspects of the Environment likely to be Significantly Affected by the Proposed Development Including in Particular: - Human Beings - Fauna and Flora - Climatic Factors - Air - Noise - Soils & Geology - Surface Water & Groundwater - Landscape - Material Assets including Architectural, Archaeological and Cultural Heritage - Inter-relationship of the above factors	Sections 9.0 to 20.0	
	(c)		Description of the Likely Significant Effect of the proposed development on the environment resulting from: the existence of the proposed development; the use of natural resources; and the emission of pollutants, creation of nuisances and the elimination of waste	Sections 9.0 to 20.0
			Description of Forecasting Methods Used to Assess the Effects on the Environment	Section 3.4
(d)		Indication of any Difficulties Encountered by the Developer in Compiling the Required Information	Section 3.5	

3.9 References

EPA (2002) EPA Guidelines on the Information to be contained in Environmental Impact Statements. *Environmental Protection Agency, Wexford.*

EPA (2003). Advice notes on current good practice in Preparation of Environmental Impact Statement. *Environmental Protection Agency, Wexford.*

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4.0 RATIONALE FOR PROJECT AND REVIEW OF ALTERNATIVES

4.1 General Rationale for Project

Figure 1.3 depicts the extent of the worked out sand and gravel pit at Walshestown, Co. Kildare. Figure 1.3 also includes the Punchestown Racecourse lands located along the western boundary of the Application Site.

As discussed previously, the lands have been worked since the early 1970s for sand and gravel production. This has resulted in much of the lands requiring restoration, as can be seen from the aerial photograph. Section 4.2 below reviews historical planning permissions for the Application Site, with many of these permissions requiring restoration, as highlighted in Table 4.1. It is the intention of this Application to meet the requirements of these permissions in one master restoration plan. This master plan is intended to meet specific objective No. 9 of the Kildare County Development Plan, which requires rehabilitation for any future planning permissions for this Site (Section 4.3 of EIS).

4.2 Planning History

The Application Site at Walshestown and adjoining townlands has a long planning history, spanning a number of townlands including Walshestown, Blackhall, Tipperkevin and Bawnogue.

Figure 4.1 provides a pictorial account of the relevant permissions for Readymix plc (now Cemex) sand and gravel extraction activities in the vicinity of the Application Site since the late 1960s. Appendix 2 provides copies of some historical planning permissions relating to the Application Site.

Extraction of sand and gravel from the Application Site is understood to have begun under the provisions of Reg. Ref. 8359 (1969). Subsequent planning applications for sand and gravel extraction and related activities at the Application Site have typically required the restoration of the Site. These planning permissions, listed in chronological order are provided in Table 4.1.

Table 4.1 Summary of Planning Permissions for the Application Site

P.P.R. No.	Date of Decision	Townland	Summary of Permission	Summary of Conditions Referring to Restoration
8359	17 December 1969	Blackhall	Gravel Pit	3. When development has been completed, reinstatement works to be carried out to the land to the satisfaction of KCC
9927	8 February 1971	Walshestown	Erection of aggregate washing plant	3. Reinstatement to be carried out as set out in developer's letter of the 6 January 1971
385/75	19 January 1976	Blackhall	Erection of a concrete batching plant	4. Applicant to provide dump for dumping excess or returned concrete and for dumping cleanings from mixing trucks
340/76	25 March 1976	Walshestown	Extraction of sand and gravel	7. Landscaping and restoration programme to be carried out in accordance with Drawing No. 75-121-11 lodged with KCC on 25 March 1976
339/76	25 March 1976	Blackhall	Extraction of sand and gravel	All sections to be completely reinstated by the end of 1981
131/78	8 May 1978	Blackhall	Change of location and design of approved concrete plant	4. Applicant to provide dump for dumping excess or returned concrete and for dumping cleanings from mixing trucks 9. Reclamation to be carried out in accordance with proposals submitted on 23/3/1978
87/000791	16 September 1988	Blackhall	Concrete batching plant	12. All excess or waste concrete shall be disposed of within worked out areas of the applicants sand/gravel pit adjoining the site of the plant and to the satisfaction of the planning authority
87/799	20 November 1987	Blackhall	Retention of sand and gravel extraction	Not available at time of print
91/1558	22 April 1992	Blackhall	Continuation of existing sand and gravel extraction	Not available at time of print
92/897	25 May 1993	Blackhall	Retention of and continuation of existing batching plant (971/87)	12. All excess or waste concrete shall be disposed of within worked out areas of the applicants sand/gravel pit adjoining the site of the plant and to the satisfaction of the Planning Authority
93/592	7 January 1994	Blackhall	Retention of portion of extraction area and new extraction area of sand and gravel on 8.1ha. site	12. The site shall be restored within one year of the expiration of this permission, or of the permanent cessation of operations before this date
96/100	16 November 1996	Bawnoge, Tipperkevin and Walshestown	Extraction of sand and gravel from an area of 17.2ha. on an overall site of 18.1ha.	See wording of Condition 10(c), reproduced below.
97/1467	3 April 1998	Blackhall	Extraction of sand and gravel from an area of approx 6.02ha. on an overall site 7.36ha. as an extension of existing extraction area	Not available at time of print
98/338	14 October 1998	Blackhall	Retention and continuation of the existing concrete batching plant permitted under P.P.R. 92/897	13. All excess or waste concrete shall be disposed of within worked out areas of the applicant's sand and gravel pit adjoining the site of the plant and to the satisfaction of the Planning Authority

In particular, Condition 10 of the 1996 Permission (Ref 96/100) requires the following relating to future restoration of the Site:

10. *The site of the proposed development shall be restored in accordance with a scheme which shall include detailed plans and particulars and which shall provide for phased and final restoration, profiling and landscaping and which shall be submitted to and agreed in writing with the planning authority prior to the commencement of development. The restoration, profiling and landscaping scheme shall include the following:*

- (a) *provisions for the removal from the site of structures and plant associated with the extraction operations and of waste materials that are not required for restoration purposes,*
- (b) *details of the nature of any filling materials which may have to be imported into the site for restoration purposes and the method and timing of any filling operations arising from such importation,*
- (c) *Provisions for the suitable preparation and grading of the area to be restored by the use of imported materials, waste materials or overburden materials,*
- (d) *Provisions for spreading over the area to be restored, the subsoil and topsoil or imported subsoil and topsoil, if required,*
- (e) *Details of the final surface levels of the restored area, which levels shall be such as to allow satisfactory drainage of and outfall from the site and provisions for the restoration of natural surface and subsoil drainage of the area to be restored,*
- (f) *Details of the slopes to which the faces of the pit shall be graded,*
- (g) *Details of the aftercare management, such as cultivation, seeding, planting and subsequent maintenance and management, which it is proposed to take in order to render such area of land restored under this condition suitable for use which shall be appropriate to the area, and*
- (h) *A detailed programme for the implementation of the restoration operations required by this condition including an indication of the dates relative to the progress of the gravel extraction by which each phase of the restoration shall be completed.*

As highlighted above, Condition 10(c) of the 1996 Permission for the Bawnogue, Tipperkevin and Walshestown townlands envisaged 'provisions for the suitable preparation and grading of the area to be restored by **the use of imported materials**, waste materials or overburden materials.

It is the intention of this restoration master plan, described in Section 8.0, to meet all restoration conditions in permissions ranging from 1969 to 1998. Furthermore, the restoration master plan is intended to meet the Kildare County Development Plan Special Objective: Restoration of Pit No. 9 (described in Section 4.3).

4.3 Kildare County Development Plan (2005 – 2011)

The following excerpts are considered relevant to any proposed licensed inert waste facility, such as the subject of this EIA. Items of particular relevance to this assessment are underlined.

Page 212, Policy EI 7

'To ensure that all existing workings be rehabilitated to suitable land uses and that all future extraction activities allow for the rehabilitation of pits and proper land use management. Land filling with inert material is the preferred method, however, each planning application in relation to extractive industries shall be considered on a case by case basis and, where relevant, will be dealt with under the Waste Management Strategy.'

Page 215, Table 14.2

Includes a list of Specific Objectives for Sand and Gravel Pits. The wording of the County Development Plan Table 14.2 is shown below. Pit No. 9 Walshestown Pits, which is depicted in Figure 3.1, is of relevance to the Application Site. Pit No. 8 is also depicted in Figure 3.1 for reference purposes (Newtown Great – Athgarret Area, which is the subject of the CPI Ltd. Application). :

Table 14.2 List of Specific Objectives for Sand and Gravel Pits (continued)

Map No Pit Area	7 Wolfestown Pit	8 Newtown Great - Athgarret Area	9 Walshestown pits
Specific Objectives	Limited extension to extraction* allowed. Rehabilitation of this area & existing pit without cost to the Council. After-use to be agriculture, forestry or amenity woodland. No extraction below water table.	New extraction has been allowed here. After-use to be agriculture & amenity woodland. Need to complete this rehabilitation.	Limited extension to extraction* area allowed. Right of way across existing pit during rehabilitation programme to be investigated. Screening of adjoining lands essential on visual grounds.
Detailed Interpretation	With any permission for any new extension should be coupled a rehabilitation programme for both the new work and the existing pit, without cost to the Council.	With any planning permission for any further extraction*, a detailed rehabilitation programme will be required for both new work and the existing pit.	Planning permission and a very weak rehabilitation clause applies to this large pit. Rehabilitation clauses are essential in any further planning permissions. Rights of way across large pits are important in order to link Punchestown Race Course with future bridle path along road 211.

Details of the proposed right of way across the Application Site to link the Punchestown Racecourse and future bridle path, mentioned in the table above, are provided in Sections 10.0 (Flora and Fauna) and 18.0 (Cultural Heritage and Archaeology). Figure 10.3 depicts the

location of the proposed right of way which extends the Pilgrims Walk from Tipperkevin to Punchestown Lands.

4.4 Kildare Waste Management Plan (2005 – 2011)

The following excerpts are considered relevant to any proposed inert waste licensed facility, which is the subject of this application.

Page 37, Section 257 Construction and Demolition Waste:

It is estimated that a total of 1,900,000 tonnes of C&D waste was managed within the functional area of Kildare County Council in 2003. Only 552,000 tonnes of this figure was generated in the County. The remaining 1,348,000 tonnes (mainly soil) were imported from outside the County. The unprecedented growth in the Greater Dublin Area is one reason so much C&D material was imported into County Kildare. Dublin has few locations suitable for the acceptance of large volumes of soil, especially now that huge underground excavations have become so prevalent, e.g., the Port Tunnel, underground car parks, etc. County Kildare has facilitated the acceptance of such volumes of soil from the Dublin Region.

Page 97, Section 8.12.7. Construction and Demolition Waste

The Council will:

- promote the provision of mobile crushing and screening systems located at existing/proposed waste facilities where practical;*
- promote the provision, by the private sector, of the necessary infrastructure for the recovery and recycling of C&D waste; and*
- promote and encourage quarry operators and large construction sites to develop temporary recycling facilities where possible.*

In 2003 it is estimated that 1,900,000 tonnes of C & D waste were managed in County Kildare. The vast majority of this was soil or inert waste. These quantities are unlikely to reduce in any significant way once development in the Greater Dublin Area continues at current rates.

To facilitate management of 1,900,000 tonnes per annum within the County, it follows that there is a requirement for at least ten strategically located permitted facilities for the acceptance of soils. Currently there are only four to five facilities of this nature in the County.

In terms of site selection, the following hierarchy shows the favored options in order of preference:

- re-use of material where produced*

- *quarry restoration*
- *land reclamation*
- *agricultural/recreational use*
- *raising of development land*
- *raising of sites for one-off houses*

4.5 Permitted Soils Facilities in Greater Dublin Area (GDA)

According to the Dublin Waste Plan 2005 to 2010 (relevant as Kildare is located in the GDA), 107 permitted facilities were identified in the Dublin Region, 48 of which were dealing with soils for recovery of land, typically of a temporary nature. The Dublin Waste Plan goes on to state:

Arguably a better approach (and a more sustainable land-use) would be to have a smaller number of C&D waste management points, for example situated in old quarries. Mixed C&D waste could be screened and materials, such as concrete, brick and stones, could be used to produce granular material suitable for engineering fill.

The DoEHLG is currently reviewing the Waste Management (Permit) Regulations, a draft revision was subject to public consultation during July – September 2005 (See section 4.1 below).

The soil could be used to reinstate and restore the quarry. Fewer sites would be easier to regulate and permitted sites for C&D waste are demanding on Local Authority resources and closely inspecting a large number of sites is challenging. The Region needs to consult with the NCDWC and the CIF to encourage the establishment of a number of additional large scale processing facilities e.g. in old quarries or other areas in the Dublin Region to screen out recyclable materials before deposition in permitted sites.

As a result of the above, the new Waste Facility Permit Regulations were issued in 2007-2008. The main threshold is highlighted in Part I, Schedule III of the Regulations which applies a “once-off” threshold of 100,000 tonnes of inert soils and stones for land improvement purposes. It is expected that the net result of these Regulations will realise the above vision of the Dublin Waste Plan, i.e. fewer sites situated in old quarries which are licensed in the Greater Dublin Area.

It is the intention of this Application for the rehabilitation of the Walshestown Pit to realise this vision of the Dublin and Kildare Waste Management Plans.

4.5.1 Licensed Soils Facilities in Greater Dublin Area

As documented in strategic planning Guidelines, the Greater Dublin Area is taken to include Fingal, Dun-Laoghaire Rathdown, South Dublin and Dublin City Councils, and Meath, Kildare and Wicklow County Councils. As the 100,000 tonne threshold now applies for land

improvement purposes under the new 2007-2008 Waste Facility (Permit & Registration) Regulations, permitted sites are not considered in this Section as they will be filled by local small-scale developments' generally smaller volumes of inert waste soils.

This discussion is based on the larger scale developments that can quite easily generate in excess of 100,000 tonnes per development (e.g. developments in Cherrywood, Docklands, Tallaght, Metro North). Inert materials to be placed at this Facility will be sourced from construction and/or demolition sites where testing has indicated that the material will meet the criteria for an Inert Waste Landfill as set out in Section 2.0 of Council Decision 2003/33/EC (discussed further in EIS Section 7.0).

It is important to state therefore, that there are currently only a limited number of licensed facilities available to accept large volumes of waste soils from the Greater Dublin Area (GDA), where urban developments typically generate soil tonnages in excess of 100,000 tonnes per dig. The three most prominent licensed facilities are listed below under the "current facilities". Pending soils facilities for land improvement are also listed:

Table 4.2 Licensed Soils Facilities for Land Improvement in Greater Dublin Area

Licence No.	Licencee	Location	Approximate Capacity remaining (tonnes)	Types of Soils Accepted/ Proposed	Current Status
<i>Current Facilities</i>					
W0129-02	Murphy	Naul, Co. Dublin	4.2 million	Up to 100mg/kg PAH	9 year life remaining
W0151-01	Murphy	Gormanstown, Co. Meath	unknown	Greenfield soils only	unknown
W0156-01	KTK Sand & Gravel Ltd.	Ballymore Eustace, Co. Kildare	100,000	Greenfield soils only	<1 year life remaining
<i>Pending Facilities</i>					
W0247-01	Behan's Land Restoration Ltd.	Blackhall, Co. Kildare	4.0 million tonnes	Greenfield soils only	Application lodged with EPA in May 2008
Not available	Cemex (ROI) Ltd.	Walshestown, Co. Kildare	7.6 million tonnes	Up to 100mg/kg PAH	Application lodged with EPA in Q4/2008

As highlighted in Section 4.4. above, there will be an annual need of up to 1.9 million tonnes of inert soils generated in the Greater Dublin Area to be managed in the Kildare region for the foreseeable future. Furthermore, the Kildare Waste Plan envisages the development of up to

10 facilities to accept waste soils to meet the demand. Currently in Kildare there is only one such licensed facility (KTK Sand & Gravel Ltd.) and one pending (Behan's Land Restoration Ltd.).

All other sites are permitted sites which are now limited to 100,000 tonnes (total). It is likely therefore that many of these permitted sites will close in the coming 12 to 18 months as it is not economically feasible for these sites to operate as licensed facilities, and if they have exceeded the 100,000 tonnes threshold already they will now require to submit a Waste Licence Application since 1 June 2008 (no 'grandfather' clause). An example of these closing facilities is the N&C Enterprises Ltd. Pit in Kilmeague, Co. Kildare.

Summary Statement:

There is a clear need for licensed inert waste soils facilities in the GDA. In Kildare the need can be served by the presence of both the Blackhall and Walshestown proposed licensed facilities. It is important to state that there is only one facility in Ireland which accepts inert soils with total PAH concentrations up to 100 mg/kg, which significantly restricts competition for this type of inert material. This proposal therefore includes the acceptance of soil with PAH concentrations up to 100 mg/kg to serve the inert soil needs of the GDA. This is dealt with in more detail in Sections 8.0 and Section 12.0.

4.6 Consideration of Alternatives

A number of alternatives are considered below, which range from the 'do nothing' scenario to returning the lands to Eastern Kildare Uplands Transition character:

Option 1: - "Do Nothing" (i.e. leave Site in current condition)

This option was considered, however the rehabilitation of the Walshestown Pit is required for the following reasons:

- Kildare Co. Development Plan cites that the Walshestown Pits should be restored (Pit No. 9);
- Many planning permissions from 1969 to 1998 for the Application Site require restoration; and
- Punchestown Management has expressed a desire for the rehabilitation of the lands as presented to them in meetings by the Applicant dating between August 2007 to September 2008. The Applicant presented a Draft Restoration Plan to Punchestown in March 2008 (Appendix 3.1).

For the above reasons, Option 1 is considered not appropriate.

Option 2: - Import sufficient materials to re-grade the Site at existing levels

As highlighted in Section 4.4. and 4.5 above, there is a clear need for facilities to accept soils in the Greater Dublin Area. In order to satisfy this need, the Walshestown Site is more than appropriate to accept such inert materials. Therefore importing low volumes of inert materials *for re-grading purposes only* would be unsuitable because the opportunity would be missed for this worked out (brownfield) site to serve the needs of the Greater Dublin Area as an outlet for inert soils, in particular soils from major urban excavations in Dublin City.

Currently there is only one facility in Ireland which is licensed to accept inert brownfield soils up to 100 mg/kg total PAH. That is the Murphy Environmental Site located in the Naul, Co. Dublin (WL0129-02). Typically, the only alternative from a costs point of view is to ship these materials overseas for onward treatment/disposal which is very costly, unsustainable and wholly against the proximity principle. The case again is present for the use of the Walshestown Pit for the placement of inert soils to meet the demand in the Greater Dublin Area (detailed in Section 4.5 above).

For the above reasons, Option 2 is considered not appropriate.

Option 3 (Proposed Option): - Import sufficient materials to re-contour the Site to a profile in keeping with Eastern Kildare Uplands Transition character

- The Site both previously and currently is the subject of a waste permit which allows for the lands to be filled with inert waste materials for restoration purposes. The application for a waste licence and planning permission for this Site is a continuation of this currently permitted activity;
- Kildare Co. Development Plan cites that the Walshestown Pits should be restored (Pit No. 9).
- The planning permissions for the Site has conditioned the operator to reinstate the lands post-quarrying;
- The Site is a brownfield site (previously disturbed) which requires restoration - Regional Planning Guidelines for the Greater Dublin Area (includes Kildare) prefer the re-use of brownfield lands, rather than the use of greenfield lands, for re-development;
- Kildare Waste Management Plan highlights the need for additional C&D recycling facilities (up to 10 no.), to handle ca. 1.9 million tonnes per annum;
- EPA Guidelines for the Quarry Sector recommends the importation of waste materials for the restoration of worked out pits; and

- It is the intention of the Application to restore the land to its former landscape setting (Eastern Kildare Uplands Transition), which also meets the desired outcome as expressed by Punchestown Management.

For the above reasons, **Option 3 is considered to be the preferred option, and the EIS is based on this preferred option.**

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5.0 STAKEHOLDER ENGAGEMENT

5.1 The Scoping Process

A scoping process identifies the issues that are likely to be important (i.e. primary issues) during the EIA process and considers these in greater detail than those that are not (i.e. secondary issues). Scoping is an essential (although not statutory) part of the preparation of an EIS as it ensures that all potential and important significant impacts on the receiving environment are taken into account at an early stage. Scoping by its very nature will evolve with the project as design changes are made and more detailed information on environmental issues and design comes to hand. However, as an early-stage tool it provides relevant information on the most important potential impacts of the project which have to be addressed in the EIA process. It also provides an opportunity for the exchange of views at an early stage when there is still flexibility in the design of the development.

This section of the EIS considers the range of environmental aspects relevant to the proposed restoration of the Walshestown Site and offers, based on the result of the ongoing stakeholder engagement process carried out between June 2006 and September 2008, a preliminary view on the perceived potential effects of the project. The results of the scoping process were taken into account in design of the final restoration plan for the Site. This reporting of the scoping process has taken account of the Guidelines on Information to be contained in Environmental Impact Statements (EPA, 2002) and the European Commission Guidance on EIA Scoping (EU Commission, 2000).

The Applicant recognises the value of the scoping approach, and the purpose of this section of the EIS is to confirm that all relevant issues were identified, and that the assessment process described later followed the recommended EIA guidelines from the EPA (EPA 2002), namely that sufficient information was provided on the environmental effects of the proposals so as to be taken into consideration by the proponent and their design engineers. It is noted that Golder Associates undertook an Initial Scoping Exercise on behalf of the Applicant in early 2007, which identified landscape & visual effects, and groundwater, as primary considerations of the EIA process for this proposed development (see EIS Section 5.4 for further details).

5.2 Public Consultation Undertaken

Since June 2006 there have been ongoing communications with various stakeholders concerning the proposed restoration plan at Walshestown. Punchestown Racecourse was identified as a significant stakeholder early in the process and therefore particular attention was paid to the Punchestown complex. The key stakeholders that were engaged include the following:

- Punchestown Management;

- Kildare County Council (Planning Department);
- Kildare County Council (Environmental Department);
- The Environmental Protection Agency (EPA);
- An Taisce;
- National Parks and Wildlife Service (NPWS), Department of Environment, Heritage and Local Government (DoEHLG); and
- National Museum of Ireland (Archaeology).

The stakeholder engagement process with regard to the proposed restoration at Walshestown was undertaken with the consultees listed above. The following approach to consultation and involvement during the scoping process was adopted:

- Early involvement of stakeholders;
- Clear and timely communication;
- Responding to requests fully and quickly;
- Being open and flexible;
- Providing full information promptly to encourage fair and informed discussion;
- Establishing clear and realistic timetables for accepting requests and submissions, and being sensitive to limited resources available to individuals and groups;
- Providing information that is clear and easily understood;
- Providing feedback where possible; and
- Frequent monitoring and evaluation of the effectiveness of the consultation program.

5.3 Initial Response

The following responses (Table 5.1) were received following detailed scoping activities carried out by Golder on behalf of the Applicant between June 2006 and September 2008.

Table 5.1 Response to Scoping Activities undertaken between June 2006 to September 2008

Applicant – Cemex (ROI) Ltd.	Consultee	Details
Waste Permit/Licensing Consultations		
June 2006 – Golder submitted an application to KCC to update the existing waste permit (WPR 71/2002)	Kildare Co. Co. (KCC) considered this application over a ca. 12 month period, and issued a letter on 27 July 2007 requiring a licence application to be submitted	Appendix 1.1 (WPR 71/2002) Appendix 1.2 (KCC Letter 27/07/08)
March to May 2008 – Golder submitted details of the preparation of a Waste Licence Application to KCC. Golder also requested a Temporary Waste Permit	KCC requested further information	Golder letter dated 4 March 2008 KCC letter dated 12 May 2008 (available on request)
June 2008 – Golder submitted further information	23 July 2008 – KCC issued a Temporary Waste Permit	Appendix 1.3 (WPR 236/2006)
Planning Consultation		
July 2008 – Golder submitted letter to KCC requesting planning meeting	Meeting held on 4 September 2008, with KCC, Cemex and Golder present	KCC highlighted a number of items to be addressed in the planning application, including cross sections from Punchestown stand to the Eastern Uplands, consideration of a right of way across the restored surface, and cumulative effects of adjoining developments
Environmental Consultation		
August 2008 – Golder submitted consultation letter to district Conservation Officer and Ranger	NPWS	Golder letter to NPWS dated 8 August 2008 NPWS email dated 11 August 2008 stated “No comment at this time”
September 2008 – Golder submitted letter to EPA requesting Pre-Application Meeting	Meeting held on 22 September 2008, with EPA and Golder present	EPA requested that surface water management be addressed: EIS, Section 8.0
May 2008 – Dr. Charles Mount carried out archaeological consultations	National Monuments Section of DoEHLG & KCC	EIS, Section 18.0
September 2008 - Golder contacted KCC to discuss the Eastern Kildare Uplands Study (1980s) and references to a right of way across Walshestown lands to Punchestown	Mr. Sean Byrne & Mr. Martin Dowling (KCC Planning Department)	Mr Sean Byrne to provide copy of Eastern Kildare Uplands Study (pending – numerous requests have been made to KCC but have been unfruitful at time of printing this document)

(Continued over)

Applicant – Cemex (ROI) Ltd.	Consultee	Details
Key Stakeholder Engagement – Punchestown Racecourse		
11 August 2007 – Presentation made by Golder and Applicant, which included details of the proposed restoration plan	Numerous members of Punchestown Management	A PowerPoint presentation was made providing views of the proposed restoration lands at Walshestown. (Draft Version of document entitled “Restoration Plan – The Punchestown Perspective”
11 September 2007 – Golder attended a meeting at Punchestown lands to discuss water related issues and other items	Punchestown Management attended	A Site walkover was conducted to establish the concerns of Punchestown Management
4 April 2008 – Cemex issued final version of document entitled “Restoration Plan – The Punchestown Perspective”	Punchestown Management attended	Appendix 3.1
30 May 2008 – Golder and Applicant attended a meeting at Punchestown lands	Punchestown Management attended.	Water supply issues discussed
12 September 2008 – Meeting with the Applicant and Punchestown	Punchestown Management attended	Detailed discussions were held, during which Punchestown expressed their support for the proposed restoration plan for Walshestown

This scoping process with stakeholders, described above provided invaluable information on the study; ascertained the perceptions and requirements of local stakeholders (i.e. Punchestown Racecourse), government and regulatory agencies, and other interested groups; and assisted in gathering additional information of relevance.

5.3.1 Scope and Approach

The issues, concerns and requests raised in relation to the scoping process are highlighted in detail below:

- Punchestown Management requested that the restoration plan would include the following items:
 - Re-creation of Priest’s Hill, a knoll feature removed during mineral extraction operations within the Site (Figure 10.3). It is enshrined in local folklore that from here priests used to watch the racing when Ireland’s bishops once tried to enforce a ban on priests going to race meetings;
 - Provide water for racecourse irrigation during drought conditions (either surface water or groundwater) – estimated requirement approximately 6.0 million gallons of water per annum (ca. 27,300 m³);

- Removal of cypress trees along the western boundary of the Application Site to remove shadow-cast and frost pocket aspects from within the race course curtilage. These would be replaced by a landscaped area incorporating trees but avoiding any shadow-cast; and
- Relocate existing stone wall by ca. 10.0 metres eastwards to allow for an ambulance track and other Punchestown contingencies.
- Kildare Co. Co. requested during the pre-planning meeting on 4 September 2008:
 - Cross sections from Punchestown stand to eastern uplands (EIS, Section 8.0);
 - Communicate with relevant persons in KCC regarding the Eastern Kildare Uplands Study undertaken in 1980s, in particular relating to the content of Specific Objective for Sand and Gravel Pit No. 9 in County Development Plan (EIS, Section 4.3); and
 - Understand the cumulative effects of adjoining developments to the Application Site (EIS, Section 3.6 and Sections 9.0 to 20.0);
- Environmental Protection Agency made the following comments during the pre-application meeting on 22 September 2008:
 - Address surface water management issues;
 - EPA provided advice on which classes under the Third Schedule of the Waste Management Acts 1996 to 2008 were most relevant.
- NPWS had no comment to make on the development 'at this time' (email dated 11 August 2008).

5.3.2 EIA Process

The following issues and comments raised in relation to the EIA process have been considered and are addressed in the scheme assessment under relevant EIS subject areas:

- **Human Beings and Community Effects:** Issues regarding restoration activities and sensitive receptors are addressed in Sections 9.0, 14.0 and 15.0);
- **Flora & Fauna:** Potential effects on existing habitats and proposed restoration plan to be considered in detail (Section 10.0);
- **Soils & Geology:** Potential migration of contaminants to soil beneath the Application Site footprint (Section 11.0);
- **Water Resources:** The importation of inert soils (up to 100 mg/kg PAH) will require a detailed water impact assessment report (Section 12.0);
- **Air Quality & Climate:** Issues regarding potential fugitive air emissions during restoration activities to be addressed. Issues regarding climate change and ambient dust monitoring requirements also to be considered (Sections 13.0 and 14.0);

- **Noise:** Potential noise from traffic and inert waste processing activities to be considered (Section 15.0);
- **Traffic:** Issues raised with regard to traffic volumes and impact on national and local roads and potential cumulative effects of adjoining developments (Section 9.0 and Appendix 4);
- **Landscape & Visual Impact:** As the Punchestown Lands are considered a highly sensitive receptor, this is an important aspect for consideration and is addressed in a detailed Landscape and Visual Impact Assessment (Section 16.0); and
- **Cultural Heritage:** In particular the Pilgrims Walk located towards the south of the Site (Section 18.0). It is noted that this was highlighted in the County Development Plan as a specific objective (Pit No. 9). The enhancement and ultimate preservation of this feature has been incorporated in the final restoration plan for the Site (Figure 10.3).

5.4 Potential Impacts and Key Considerations

One of the objectives of this scoping exercise was to identify key considerations to be dealt with in detail during the assessment stage. The primary and secondary considerations following the stakeholder engagement process are listed in Table 5.2. Each of the key considerations was ranked as having either primary or secondary potential significance by Golder's specialist EIA consultants. Primary considerations form the focus of the EIS, while secondary considerations are addressed in less detail.

The assessment of what is considered a primary or a secondary consideration was undertaken using the following information:

- Examination of the historical data, previous planning applications and grants for the Site from Kildare Co. Co. and An Bord Pleanala;
- Consideration of the established issues associated with exhausted sand and gravel quarries;
- Comments received from the consultation process (Table 5.1); and
- Site-specific information obtained to date (i.e. geological and topographical information) and assessed by specialists in hydrogeology and environmental impact assessment.

The proposed Walshestown Pit Restoration project raised a number of matters that needed to be considered in the EIA and the consequent EIS. Of these, it was apparent that some were likely to be of greater impact than others, as well as varying in impact during different times of the development with special regard to sensitive receptors around the Application Site.

Table 5.2 Primary and Secondary Considerations

Primary Considerations
Landscape and Visual Impact
Water Resources (groundwater and surface water)
Traffic
Human Beings
Secondary Considerations
Air Quality and Noise
Soils and Geology
Archaeology & Cultural Heritage
Ecology and Nature Conservation

5.5 Timeframe for development

The EIA assesses the potential impact from the commencement of construction of the development, through construction, to operation and the post-closure periods. The following timeframes are discussed in greater detail in Section 8.0:

- Construction Phase - Ongoing but particularly in Years 1 & 2;
- Operation Phase – Years 1 to 13; and
- Closure Phase – Years 14 to 15

These timeframes were considered to be the most appropriate given the volume of material to be imported versus a short/medium timeframe for restoration activities (i.e. ca. 13 years). The other parameter for consideration was the number of loads per day accessing the Facility, which has been kept in line with the historical truck movements for the Site under previous planning permissions, most notably the recent permission P.P.R. No. 96/100 (Appendix 2.3).

5.6 References

EPA (2002) EPA Guidelines on the Information to be contained in Environmental Impact Statements. *Environmental Protection Agency, Wexford.*

EU Commission (2000). Guidance on EIA scoping. *EU Commission*

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6.0 SITE SETTING

6.1 Location

The subject Site is approximately 68.0 hectares in area. It is located in the townlands of Blackhall, Walshestown, Bawnoge and Tipperkevin, ca. 5 km south east of Naas and ca. 6 km north west of the town of Blessington, Co. Wicklow. The location of the Site is depicted in Figure 1.1. Figure 1.2 depicts the Site in its local context and includes details of the adjoining townlands. An aerial photograph with details of the Application Site is provided in Figure 1.3.

6.2 Access

The existing Site is currently accessed via the L6042, as depicted in Figure 1.2. The entrance to the Site is approximately 13 m in width, widening to approximately 30 m at its interface with the L6042. The L6042 County Road extends from the R410/L2023 to the north-west of the Site. The road is approximately 6 m in width at the Site access and approximately 5.5 metres in width elsewhere.

Current traffic movements within the Application Site itself are initially over a short hard-standing section between the existing Site entrance and the weighbridge. Thereafter traffic moves within the Application Site over a network of unpaved roads. Further details of the reception area are included in Section 8.0 of this EIS.

6.3 General Topography

The general topography of the area is one of undulating rolling landscape, and is located within the Eastern Kildare Uplands (Transition) character area as defined in the Kildare County Development Plan 2005 to 2011. The lands to the west of the Site, occupied by the Punchestown Racecourse and complex, are relatively flat in character at ca. 141 to 143 mAOD. The lands then rise across the Application Site to the east to ca. 170 mAOD.

The Site has been worked since the late 1960s by Readymix plc, and more recently Cemex (ROI) Ltd., for sand and gravel production. As depicted in Figure 1.3, much of the lands have been worked out during this quarrying process.

6.4 Surrounding Land Use

The Application Site and existing Inert Waste Facility (WPR 71/2002 & 236/2006) are located within a largely agricultural area (Figure 1.3). Residences and businesses within 500 metres of the Application Site are shown on Figure 9.1.

A number of residences are located in close proximity to the Site, as depicted in Figure 9.1, which highlights 22 no. residences (including farmsteads) within 500 m of the Application Site. One business (Behan's Land Restoration Ltd.) is also located with the 500 m radius offset from the Application Site.

A number of former sand and gravel extraction sites exist in the area immediately surrounding the existing Facility. The site belonging to Behan's Land Restoration Ltd., located in Blackhall townland, is now being restored. CPI Ltd. currently operates a gravel quarry and washing facility at Newtown Great approximately 1 km east of the Application Site. This is the subject of a planning application, lodged in January 2008, for continued use of the Site for extraction activities.

Punchestown Racecourse is located to the west of the Application Site, as depicted in Figure 1.3.

Given its proximity to the two local urban centres of Naas and Blessington, and to a major population centre in Dublin, the Site is well located to serve the Greater Dublin Area as an inert waste facility. Section 4.0 provides further details of the appropriateness of this Site as an inert waste facility.

6.5 Land Ownership

Cemex (ROI) Ltd. are the owners of lands as depicted within the red line boundary in Figure 1.2. Appendix 5 includes a summary of the folio numbers pertaining to the Site which are in the ownership of the Applicant.

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7.0 WASTE ACCEPTANCE AND CHARACTERISATION

7.1 Introduction

The proposed restoration scheme at Walshestown, Punchestown, Naas, Co. Kildare provides for:

- i. Use of imported inert natural materials (principally excess soil, stones and/or broken rock excavated on construction sites) to backfill and restore a large existing void created by previous extraction of sand and gravel (ca. 85% to 90% of imported materials);
- ii. Recovery of imported inert construction materials (including stones, granular fill, concrete, blocks, bricks and ceramic tile) using crushing and screening equipment set up in a dedicated Inert Waste Processing Area (see Figure 8.4) to generate secondary (recycled) aggregate (ca. 10% to 15% of imported materials);
- iii. Recovery, using mobile screening and crushing plant, of any in-situ construction materials including soils, stones and other previously backfilled materials;
- iv. Separation of any non-inert construction and demolition waste unintentionally imported to Site (principally metal, timber, PVC pipes and plastic) prior to removal off-Site to appropriately licensed waste disposal or recovery facilities;
- v. Use of secondary aggregate to construct internal haul roads within the Application Site and to backfill existing groundwater ponds;
- vi. Export of secondary aggregate off-Site for re-use by others;
- vii. Phased restoration of the backfilled void and return to Eastern Upland (Transition) Character (including placement of cover soils and seeding);
- viii. Temporary stockpiling of topsoil and subsoil pending re-use as cover material for phased restoration of the Site; and
- ix. Infilling using inert materials imported from pre-approved external construction sites and secondary aggregate generated on-Site. No non-hazardous waste will be accepted at the Application Site. Non-inert construction and demolition wastes will be removed off-Site.

7.2 Types of Wastes to be Accepted

The types of materials to be used to restore the Walshestown Pit will be confined to inert dry waste arising mainly from civil engineering and building construction and demolition projects. The waste types acceptable for restoration purposes under any future Waste Licence will include inert materials such as stone & soils, glass, concrete, brick, tiles, ceramics, etc.

Putrescible household and commercial wastes (or 'black bag' waste) will *not* be acceptable at this Facility.

Inert waste is defined by the Landfill Directive (1999/31/EC) as: "*waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater*".

The types of waste proposed for acceptance are shown in Table 7.1.

In summary, all wastes used for the restoration of the Site will be considered inert and will meet the proposed leaching and total pollutant limit values indicated in Section 7.6. All wastes arriving at the Facility will be:

- From pre-authorised sites;
- Biologically stable, non-reactive and therefore, unlikely to produce emissions to generate landfill gas; and
- Not likely to cause instability in the restored areas after deposition at the Site.

The materials to be accepted at the Walshestown Facility will be sourced from wastes generated by construction, demolition and excavation projects in the Greater Dublin Area in the first instance, and in Leinster in general. All incoming material will undergo rigorous acceptance procedures to ensure that suitable materials are used for restoration purposes.

Non-inert materials that may be contained in loads delivered to the Site (such as wood, plastics, metals etc that are not removed at source) will be separated out and removed at the Inert Waste Processing Area, to be recovered/recycled or disposed by authorised and approved waste management contractors at appropriately authorised waste management facilities.

Table 7.1 Inert Waste to be Accepted at the Facility

EW C code (#)	Description	Restrictions
01 04	Wastes from physical and chemical processing of non-metalliferous minerals	
01 04 08	Waste gravel and crushed rocks (uncontaminated)	Testing required
01 04 09	Waste sand and clays (uncontaminated)	Testing required
01 04 12	Tailings and other wastes from washing and cleaning of non-metalliferous minerals	Testing required
17 01	Concrete, bricks, tiles and ceramics	
17 01 01	Concrete	Selected C & D waste only (*). No testing required
17 01 02	Bricks	Selected C & D waste only (*). No testing required
17 01 03	Tiles and ceramics	Selected C & D waste only (*). No testing required
17 01 07	Mixtures of concrete, bricks, tiles and ceramics	Selected C & D waste only (*). No testing required
17 05	Soil (including excavated soil from contaminated sites), stones and dredging spoil	
17 05 04	Soil and stones	Testing required
17 05 06	Dredging spoil	Testing required
17 09	Other Construction & Demolition Waste	
17 09 04	Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	Testing required
20 02	Garden and park wastes	
20 02 02	Soil and stones	Including topsoil and peat. Testing required

Notes:

(#) See EPA (2002) for full list of European Waste Catalogue (EWC) Codes

(*) Selected construction and demolition waste (C & D waste): with low contents of other types of materials (like metals, plastic, soil, organics, wood, rubber, etc). The origin of the waste must be known.

— No C & D waste from constructions, polluted with inorganic or organic dangerous substances, e.g. because of production processes in the construction, soil pollution, storage and usage of pesticides or other dangerous substances, etc., unless it is made clear that the demolished construction was not significantly polluted (i.e. <100mg/kg for PAH, which is a key indicator parameter.)

— No C & D waste from constructions, treated, covered or painted with materials, containing dangerous substances in significant amounts.

7.3 Volume of Wastes to be Accepted

It is proposed to import ca. 4.2 million cubic metres of inert materials from greenfield and brownfield sites primarily from the Greater Dublin Area, as defined in the Regional Planning Guidelines 2004 to 2016. Using a conversion factor of 1.8, this equates to ca. 7.56 million tonnes of inert materials. This approximates 600,000 tonnes per year on average over a 13 year development. The actual amount imported in any year will depend on market forces. A summary of the proposed volume of waste, tonnage and timeline are highlighted in Table 7.2.

Table 7.2 Inert Waste Volumes to be Accepted at the Facility

Volume (m ³)	Conversion Factor	Total Tonnage	No. of Years (filling)
4,200,000	1.8	7,560,000	13

7.4 Source of Materials

Incoming inert materials will need to meet the engineering and environmental standards required in this restoration project. To ensure this, all incoming waste will be pre-approved before arriving on Site, and be subject to strict controls on-Site, to ensure that it is of sufficient quality so that it can be placed directly in the void area.

The Applicant intends to establish contact with major building and infrastructural developers in the Greater Dublin Area in order to source suitable, easily processed C&D and excavation wastes. The Facility operators will also approach Kildare County Council in order to be listed as an approved site for the acceptance of inert materials on County Council contracts.

It is the intention that the Facility will aim to accept waste from Contractors who practice the Construction Industry initiative aimed at prevention, minimisation and recycling of construction and demolition waste. Contractors and waste generators who support and practice this initiative are required to have a C&D waste management plan that facilitates waste segregation on site. Where this initiative is correctly implemented a significant proportion of unsuitable waste can be diverted from the Facility prior to delivery on site. The initiative will ensure qualitative prevention (reducing the hazards posed by construction and demolition waste) generating a more homogenous mix of waste, separating at source major contaminants and facilitating higher recovery potential of inert material.

It is anticipated that inert waste material from such sources will provide the majority of incoming waste into the Facility and thus ensure that a high quality material will be accepted. Incoming material from other sources will be subject to more rigorous investigation prior to acceptance. The intention is to not accept mixed C&D waste streams having a large proportion of non-inert materials that would require intensive sorting and separating processes. The proposed waste acceptance and approval procedures are outlined in Section 7.5.

7.5 Waste Acceptance Procedures

Incoming material to the Walshestown Facility will be limited to the wastes listed in Table 7.1. Prior to acceptance of waste from a specific source, Basic Characterisation of the waste will be carried out in accordance with the Annex to Council Decision 2003/33/EC (Council Decision 2003). Inspection, documentation and control procedures will be implemented to ensure that only high-quality material will be accepted and processed.

Waste shipments will arrive by truck at the Facility Reception. Scheduled and documented shipments will be directed to the weighbridge where the load is weighed and visually checked by CCTV cameras. The Walshestown Facility will have established procedures for verification of waste. Subject to the waste being suitable, the Facility operator will sign a declaration and will give a copy to the waste contractor.

Any waste streams resulting from recovery or processing of material that do not meet the specification of the required restoration materials will be removed and disposed or recovered off-Site.

Records will be maintained on all consignments of waste, providing information on:

- The tonnage and European Waste Catalogue (EWC) Code for the waste materials imported and/or sent off-Site for disposal/recovery;
- The names of the agent and carrier of the waste, and their waste collection permit details, if required (to include issuing authority and vehicle registration number); and
- Details of the ultimate disposal/recovery destination facility for any rejected waste and its appropriateness to accept the consigned waste stream, to include its permit/licence details and issuing authority, if required.

7.6 Waste Characterisation

The criteria and procedures for the characterisation and acceptance of waste at the proposed Facility will operate in general conformance with Council Decision 2003/33/EC (Council Decision 2003), procedures which include a series of tests based on the following hierarchy:

Level I - Basic Characterisation

Basic Characterisation is the first step in the acceptance procedure and constitutes a full characterisation of the waste by gathering all necessary information for a safe disposal of waste in the long term. Basic information on the waste such as type and origin, composition, consistency and leachability will be collected.

The fundamental requirements for Basic Characterisation are listed in Section 1.1.2 of the Annex to Council Decision 2003/33/EC (Council Decision 2003).

Basic Characterisation will be carried out on the wastes prior to acceptance at the Walshestown Facility. In general, the waste contractor will be required to carry out Basic Characterisation and supply it to the Facility operator. Analysis testing will constitute laboratory testing for a range of parameters, to be specified in the Waste Licence, and will be in line with tables 2.1.2.1 and 2.1.2.2 of the Annex to the Council Decision 2003/33/EC (reproduced in this document as Table 7.3 and Table 7.4). Some wastes will not require testing, as indicated in Table 7.1, and in accordance with Section 2.1.1 of the Annex to Council Decision 2003/33/EC.

A target of at least one test per 2,000 tonnes of waste is proposed. Even if a consignment of waste from a source is less than 2,000 tonnes it will be subjected to Basic Characterisation testing.

Level II – Compliance Testing

Level II Compliance Testing comprises periodical testing by simpler standard analysis and behaviour-testing methods to determine whether a waste complies with specific reference criteria. The tests focus on key variables and behaviours identified from Level I (Basic Characterisation) testing. Thus Level II (Compliance Testing) acts as an independent verification of Level I laboratory results.

Compliance testing will be conducted randomly for at least 1 in every 5,000 tonnes received over the weighbridge, even if a full Basic Characterisation test has already been carried out on that load. In addition one sample from each waste type/source will be tested. In the case that a Basic Characterisation has not already been carried out on the load in question, a complete testing schedule (at a frequency of 1 test per 2,000 tonnes) will be undertaken.

The compliance check will also include the following:

- Review of the Level I Basic Characterisation data;
- If appropriate, a review/audit of source site to ascertain the nature of waste being generated at that site and to ensure that it is unlikely to contain constituents or materials of concern; and
- Representative sampling and chemical analysis of waste to confirm key constituents of the waste stream indicated by the basic characterisation data.

If samples are taken for chemical analysis, they will be despatched to an INAB and UKAS-accredited laboratory for analysis. Level II checks will be documented and records retained on-Facility at the proposed Site offices.

Level III - On Site Verification of Wastes

Level III constitutes rapid check methods to confirm that a waste is the same as that which has been subjected to Basic and Compliance testing and that which is described in any accompanying documents. This Level III will consist of a visual and odour inspection of a load of waste, first at the weighbridge and again at the tipping face. If any material is visible that is not permitted for disposal at the Facility, or does not match the description, the consignment will be deemed unauthorised and the Procedure for Rejected Waste Loads will be followed (see Section 7.8).

At the weighbridge a member of the Facility staff will conduct a visual inspection of every load of incoming waste, to the extent practical, for non-conforming waste and to confirm that the consignment matches the description of the waste provided. Where there is suspicion of non-conforming waste the weighbridge transaction will not be permitted to proceed and the load will be rejected. Visual and odour inspection will be recorded as satisfactory or otherwise at the weighbridge.

The load will again be inspected at the tipping face and any unacceptable waste will be removed and quarantined until it is shipped off-Site to an appropriate waste recovery or disposal facility. Also, if any materials such as steel or timber can be recovered/recycled it will be removed from the tipped load and contained in the quarantine area (covered shed) until such time that there is sufficient quantity of like material to be despatched to an appropriate and permitted waste recovery facility.

A further inspection will be made by the plant operators at the disposal face when the vehicle has unloaded.

7.7 Proposed Leaching and Total Pollutant Values

Table 7.3 shows the leaching limit values applicable for waste acceptable at landfills for inert waste under Council Decision 2003/33/EC (Council Decision 2003). Leaching limits are calculated at liquid to solid ratios (L/S) of 2 l/kg and 10 l/kg for total release, and directly expressed in mg/l for C₀ (the first eluate of a percolation test at L/S = 0.1 l/kg). The Council Decision states that "Member States shall determine which of the test methods and corresponding limit values in the table should be used."

In addition to the leaching limit values, inert wastes must meet the additional limit values shown in Table 7.4.

Pursuant to Section 2.0 of the Annex to the Council Decision (Council Decision 2003), the Applicant proposes to use twice the leaching limit values, as shown in Table 7.5, and a value of 100 mg/kg for PAHs as shown in Table 7.6. The use of these higher limit values has been substantiated by a water impact assessment carried out by Golder (Section 12.0).

Table 7.3 Leaching Limit Values (Council Decision 2003/33/EC)

Component	L/S = 2 l/kg	L/S = 10 l/kg	C ₀ (percolation test)
	mg/kg dry substance	mg/kg dry substance	mg/l
As	0.1	0.5	0.06
Ba	7	20	4
Cd	0.03	0.04	0.02
Cr total	0.2	0.5	0.1
Cu	0.9	2	0.6
Hg	0.003	0.01	0.002
Mo	0.3	0.5	0.2
Ni	0.2	0.4	0.12
Pb	0.2	0.5	0.15
Sb	0.02	0.06	0.1
Se	0.06	0.1	0.04
Zn	2	4	1.2
Chloride	550	800	460
Fluoride	4	10	2.5
Sulphate	560 (*)	1000 (*)	1,500
Phenol index	0.5	1	0.3
DOC (**)	240	500	160
TDS (***)	2,500	4,000	-

- (*) If the waste does not meet these values for sulphate, it may still be considered as complying with the acceptance criteria if the leaching does not exceed either of the following values: 1,500 mg/l as C₀ at L/S = 0.1 l/kg and 6,000 mg/kg at L/S = 10 l/kg. It will be necessary to use a percolation test to determine the limit value at L/S = 0.1 l/kg under initial equilibrium conditions, whereas the value at L/S = 10 l/kg may be determined either by a batch leaching test or by a percolation test under conditions approaching local equilibrium.
- (**) If the waste does not meet these values for DOC at its own pH value, it may alternatively be tested at L/S = 10 l/kg and a pH between 7.5 and 8.0. The waste may be considered as complying with the acceptance criteria for COD, if the result of this determination does not exceed 500 mg/kg. (A draft method based on prEN 14429 is available).
- (***) The values for total dissolved solids (TDS) can be used alternatively to the values for sulphate and chloride.

Table 7.4 Limit Values for Total Content of Organic Parameters

Parameter	Value mg/kg
TOC (total organic carbon)	30,000 (*)
BTEX (benzene, toluene, ethylbenzene and xylenes)	6
PCBs (polychlorinated biphenyls, 7 congeners)	1
Mineral oil (C10 to C40)	500
PAHs (polycyclic aromatic hydrocarbons)	Member States to set limit value

- (*) In the case of soils, a higher limit value may be admitted by the competent authority, provided the DOC value of 500 mg/kg is achieved at L/S = 10 l/kg, either at the soil's own pH or at a pH value between 7.5 and 8.0

Table 7.5 Proposed Leaching Limit Values to be met at Walshestown

Component	L/S = 2 l/kg	L/S = 10 l/kg	C ₀ (percolation test)
	mg/kg dry substance	mg/kg dry substance	mg/l
As	0.2	1	0.12
Ba	14	40	8
Cd	0.06	0.08	0.04
Cr total	0.4	1	0.2
Cu	1.8	4	1.2
Hg	0.006	0.02	0.004
Mo	0.6	1	0.4
Ni	0.4	0.8	0.24
Pb	0.4	1	0.3
Sb	0.04	0.12	0.2
Se	0.12	0.2	0.08
Zn	4	8	2.4
Chloride	1,100	1,600	920
Fluoride	8	20	5
Sulphate	1,120	2,000	3,000
Phenol index	1	2	0.6
DOC	480	1,000	320
TDS	5,000	8,000	-

Table 7.6 Proposed Limit Values for Total Content of Organic Parameters to be met at Walshestown

Parameter	Value mg/kg
TOC (total organic carbon)	30,000
BTEX (benzene, toluene, ethylbenzene and xylenes)	6
PCBs (polychlorinated biphenyls, 7 congeners)	1
Mineral oil (C10 to C40)	500
PAHs (polycyclic aromatic hydrocarbons) (*)	100

* For determining the total of PAHs, seventeen PAH compounds will be added to a sum, as was provided for in the Murphy Environmental Hollywood Waste Licence W0129-02.

7.8 Procedure for Rejected Waste Loads

If any unauthorised waste is observed the procedure outlined below will be followed:

- The plant operators and/or another member of the Site staff must request verification of non-conformity from the delivery-vehicle driver;
- If reasonably practicable and safe to do so, non-conforming material must be reloaded onto the delivery vehicle and its driver advised that it must be delivered to a site licensed to accept such material;
- If non-conforming material cannot be reloaded, it must be moved away from the immediate operational area pending alternative arrangements for removal to an appropriately authorised facility;
- On discovery of unauthorised material, the Facility Manager must be contacted at once; and
- Should it be apparent or suspected that unauthorised material is dangerous, the area where it was deposited must be isolated and other delivery vehicles must be directed to off-load in another area until the dangerous material has been removed.

7.9 Summary

A summary of the proposed Waste Acceptance Procedures is provided below:

1. The client will be requested to complete a query form detailing waste types, origin and potential contamination;
2. On the basis of this information, the Facility Manager will decide whether the waste is acceptable or whether a Level I Basic Characterisation testing is required;
3. Where Level I testing is required, results must be provided and approved prior to any waste arriving on Site;
4. In all cases clients must sign a Customer Service Agreement and submit a copy of a valid Waste Collection Permit;
5. Waste will be received on Site and relevant data will be stored on the weighbridge record system. The following details will be recorded:
 - Date
 - Name of carrier (and Waste Collection Permit No.)
 - Vehicle registration
 - Waste owner
 - Source and origin of waste (if appropriate, name of waste facility and licence/permit number)

- Description of waste
 - Waste type and EWC code
 - Type of process producing waste
 - Amount of waste (tonnes)
 - Name of person checking load
 - Existing data on the waste
 - Physical form
 - Colour/Odour
6. Level III On-Site verification will be conducted for all incoming loads at the weighbridge, to the extent possible;
 7. Level II Compliance Testing will be carried out for a random 1-in-5,000 tonnes arriving on Site; and
 8. If all details are satisfactory, the load is directed to the area on Site being restored, or to the waste recovery processing area, where it is subject once again to Level III On-Site verification.

7.10 References

Council Decision (2003) Establishing Criteria and Procedures for the Acceptance of Waste at Landfills (2003/33/EC).

EPA (2002) European Waste Catalogue *Environmental Protection Agency, Wexford.*