Lobinstown Quarry

Environmental Impact Assessment Report

Appendix 3

General Guidance on

Baseline Environment & Impacts

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APPENDIX 3. GENERAL GUIDANCE ON BASELINE ENVIRONMENT & IMPACTS

3.1 INTRODUCTION

This Appendix provides the general guidance on baseline environment & impacts issued by the EPA (2015; 2022). The appendix gives guidance with respect to the Baseline Description of the Existing/Receiving Environment and also gives Descriptions of Effects/Impacts. The section on the Baseline Description of the Existing/Receiving Environment discusses those aspects that should be described and assessed, whereas the section on Descriptions of Effects/Impacts gives the exact definitions of the terminology given by the EPA (2022) to be used in describing the impacts on the environment/receptor.

In order to ensure internal consistency, the Impact Assessment section of the Chapter for each environmental factor, although written by different subconsultants, typically contains a reference to the above guidance and/or an introductory statement to the effect of:

"The general guidance on baseline environment and impacts given in Appendix 3 identifies the levels of impacts which are used here in order to evaluate the significance of potential impacts resulting from the proposed development. These impact ratings are in accordance with standard impact assessment criteria issued by the EPA (2015; 2022)."

It is common practice to describe the impacts in the Construction, Operational and Decommissioning stages of the project. However, in relation to quarries, due to the progressive restoration of the development over the lifetime operation, there is some cross over between the stages of development particularly those impacts that straddle the Operational, Decommissioning and Closure stage and the Post-Closure stage. For example, the breaking-up and removal of infrastructure and the movement and contouring of soils may create negative impacts with respect to noise, dust and traffic during decommissioning and restoration, whereas their impact during Post-Closure is clearly positive. Thus, we intend to describe the impacts in terms of four stages not the standard three stages.

Importantly and unless otherwise stated, we use the EPA's method of determining the significance of impacts that is described below and portrayed in Figure 3.4 of the Guidance (EPA 2022). There are seven generalised degrees of impact significance that are commonly used in EIA, which are: Imperceptible, Not Significant, Slight, Moderate, Significant, Very Significant and Profound, the definitions of which are given under Description of Effects below.

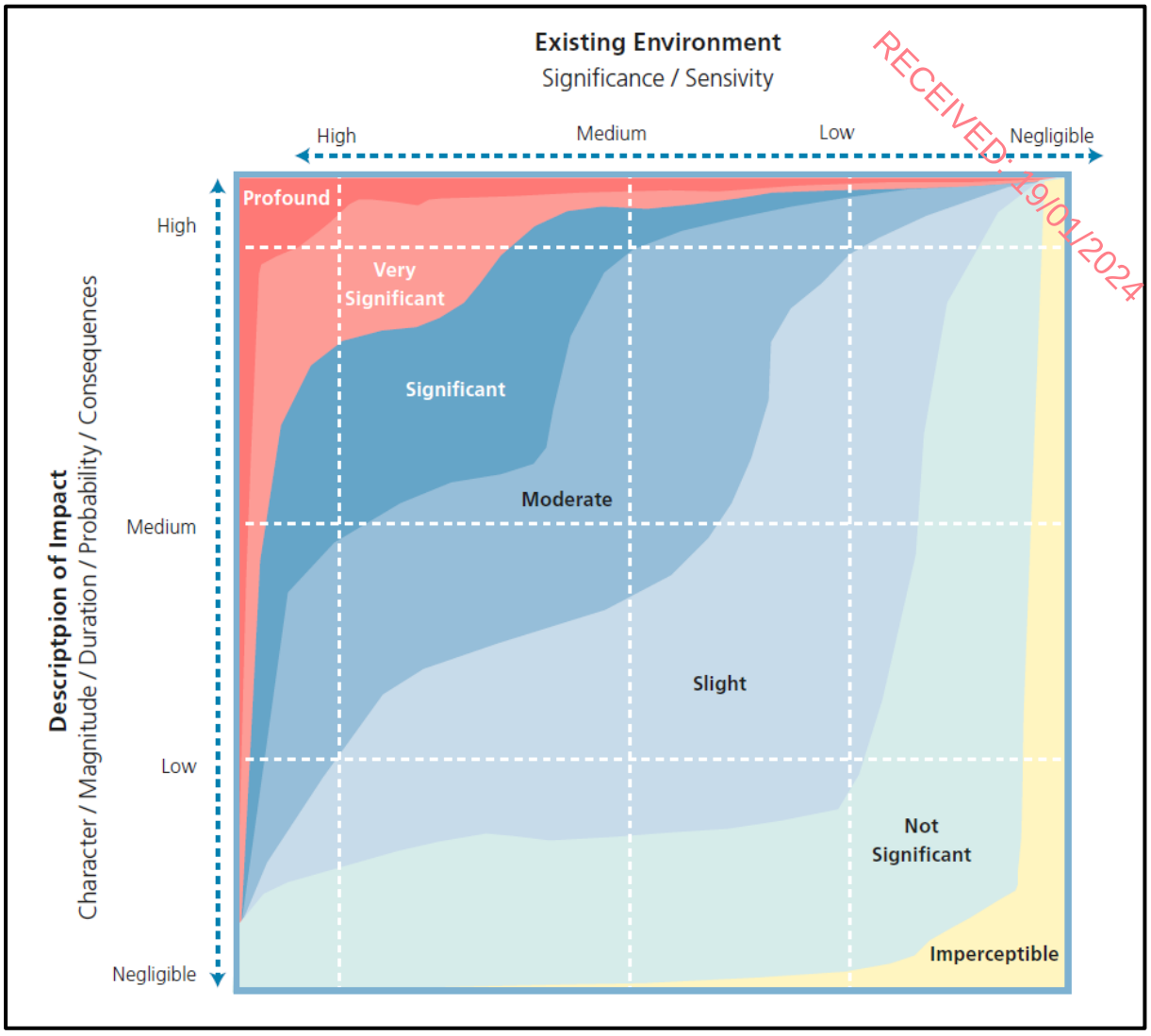

Figure 1.1. Chart showing Generalised Classification of the Significance of Impacts (EPA 2022).

The following guidance was extracted from EPA (2015; 2022).

The main purpose of an EIAR is to identify, describe and present an assessment of the likely significant impacts of a project on the environment.

It should contain:

A description of the likely significant effects of the project on the environment resulting from, inter alia:

1. the construction and existence of the project, including, where relevant, demolition works;
2. the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;
3. the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;

4. the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);
5. the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;
6. the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change; and
7. the technologies and the substances used.

3.2 DESCRIPTION OF EXISTING/RECEIVING ENVIRONMENT

Baseline information should, in the first instance, be sourced from published references to ensure reliability and objectivity.

It is important for the EIAR to draw attention to limitations about factors that may affect the reliability of baseline data. These can include the availability, completeness, accuracy, age and accessibility of data.

The need for site specific and up-to-date data is reviewed on a case-by-case basis in the context of available data and to determine whether new surveys or research are required.

Refer to Advice Notes for more detail on baseline information (EPA 2015).

To facilitate evaluation of the EIAR, references to recognised descriptive standards and classifications should be included, where appropriate, as well as supporting records, information and descriptions of methodologies employed.

3.2.1 BASELINE DESCRIPTION

Systematic, accurate and comprehensive descriptions include descriptions of the context, character, significance, and sensitivity of the existing environment.

BASELINE DESCRIPTIONS REQUIRED	
Context	Describe the location, magnitude, spatial extent, and trends of the environmental factor
Character	Indicate the distinguishing aspects of the environment under consideration
Significance	What quality, value or designation is assigned to this aspect of the existing environment
Sensitivity	How sensitive is this aspect of the environment to change

3.3 EFFECTS/IMPACTS

The description of the likely significant effects on the environmental factors should cover the direct effects and any indirect/secondary, cumulative, transboundary, short-term, medium-term, and long-term, permanent and temporary, positive and negative effects of the project.

It may be useful to consider such impacts in light of the criteria listed in Annex III of the amended Directive.

1. magnitude and spatial extent of the impact (for example geographical area and size of the population likely to be affected);
2. nature of the impact;
3. transboundary nature of the impact;
4. intensity and complexity of the impact;
5. probability of the impact;
6. expected onset, duration, frequency and reversibility of the impact;
7. cumulation of the impact with the impact of other existing and/or approved projects; and
8. possibility of effectively reducing the impact.

3.3.1 DESCRIPTIONS OF EFFECTS

Each effect usually needs to be qualified to provide a comprehensive description of the predicted effect on receptors.

The EIAR should focus on the likely, significant effects.

The extent to which the effects of major accidents and/or disasters are examined in the EIAR should be guided by an assessment of the likelihood of their occurrence (risk). This may be supported by general risk assessment methods or by systematic risk assessments required under other regulations, e.g., a COMAH (Control of Major Accident Hazards involving Dangerous Substances) assessment.

The potential for a project to cause risks to human health, cultural heritage or the environment due to its vulnerability to external accidents or disasters is considered where such risks are significant, e.g., the potential effects of floods on sites with sensitive plants. Where such risks are significant then the specific assessment of those risks in the form of a Seveso Assessment (where relevant) or Flood Risk Assessment may be required. The EIAR should refer to those separate assessments while avoiding duplication of their contents.

Checklist for Information required to describe effects (EPA 2022).

Quality of Effects It is important to inform the non-specialist reader whether an effect is positive, negative or neutral	**Positive Effects** A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
	Neutral Effects No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
	Negative/adverse Effects A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; or damaging health or property or by causing nuisance).
Describing the Significance of Effects ''Significance' is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful (also see *Determining Significance* below.).	**Imperceptible** An effect capable of measurement but without significant consequences.
	Not significant An effect which causes noticeable changes in the character of the environment but without significant consequences.
	Slight Effects An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
	Moderate Effects An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
	Significant Effects An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.

	Very Significant An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
	Profound Effects An effect which obliterates sensitive characteristics
Describing the Extent and Context of Effects Context can affect the perception of significance. It is important to establish if the effect is unique or, perhaps, commonly or increasingly experienced.	**Extent** Describe the size of the area, the number of sites, and the proportion of a population affected by an effect.
	Context Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)
Describing the Probability of Effects Descriptions of effects should establish how likely it is that the predicted effects will occur – so that the CA can take a view of the balance of risk over advantage when making a decision.	**Likely Effects** The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented
	Unlikely Effects The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.
Describing the Duration and Frequency of Effects 'Duration' is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful.	**Momentary Effects** Effects lasting from seconds to minutes
	Brief Effects Effects lasting less than a day
	Temporary Effects Effects lasting less than a year
	Short-term Effects Effects lasting one to seven years.
	Medium-term Effects Effects lasting seven to fifteen years.

	Long-term Effects Effects lasting fifteen to sixty years.
	Permanent Effects Effects lasting over sixty years
	Reversible Effects Effects that can be undone, for example through remediation or restoration
	Frequency of Effects Describe how often the effect will occur ((once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually)).
Describing the Types of Effects	**Indirect Effects (a.k.a. Secondary or Off-Site Effects)** Impacts on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway.
	Cumulative Effects The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects.
	'Do-Nothing Effects' The environment as it would be in the future should the subject project not be carried out.
	`Worst case' Effects The effects arising from a project in the case where mitigation measures substantially fail.
	Indeterminable Effects When the full consequences of a change in the environment cannot be described.
	Irreversible Effects When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost.

	Residual Effects The degree of environmental change that will occur after the proposed mitigation measures have taken effect.
	Synergistic Effects Where the resultant effect is of greater significance than the sum of its constituents, (e.g. combination of SOx and NOx to produce smog).

Note other relevant definitions, not given in EPA (2022), include:

Direct Effects

Impacts caused by the direct interaction of an activity with an environmental, social or economic aspect, and occurring at the same time and place.

Transboundary Effects

Impacts not exclusively of a global nature, within an area under the jurisdiction of a Party caused by a proposed activity the physical origin of which is situated wholly or in part within the area under the jurisdiction of another Party. Although not explicitly stated, generally applied to States and international borders.

3.3.2 CRITERIA FOR ASSESSMENT OF EFFECTS

The likely significant effects of projects on the environment must be considered in relation to a set of criteria identified in the Directive. To ensure sufficient information has been provided in this regard, the EIAR should aim to answer the types of questions included in the right-hand column of the following table in relation to each of the criteria.

Checklist for Information Required to Describe Effects

Criteria	Detailed Questions - To Determine Whether The EIAR Has:
a. Magnitude and spatial extent of the effects	• Clarified the size and scale of the effects? • Indicated the spatial extent of the effects (will some, much or all the areas be affected)? • Identified the receptors which will be affected, indicating their sensitivity and significance?
b. Nature of the effects	• Clarified which part of the environment will be affected and how significantly? • identified the aspect of the environment affected? • Described whether the effects are positive, neutral or negative?
c. Transboundary nature of the effects	• Indicated the spatial extent of the transboundary effects (will some, much or all of the jurisdiction be affected)?
d. Intensity and complexity of the effects	• Quantified the amount or intensity by which the character/quality of any environmental factor will change? • Described the degree of change (e.g., imperceptible, slight or significant)? • Identified the significance of the effect [e.g., profound or insignificant]
e. Probability of the effects	• Established the level of certainty of the assessment's findings? • Highlighted consequence that cannot be determined?
f. Expected onset, duration, frequency and reversibility of the effects	• Stated whether the effects will be continuous, intermittent or occasional? • Indicated whether the effects will be temporary, short, medium or long-term? • Highlighted irreversible effects?
g. Cumulation of the effects with the effects of other existing and/ or approved projects	• Described cumulative effects? • Considered cumulative effects due to cumulation of effects with those of other projects that are existing or are approved but not yet built or operational?
h. Possibility of effectively reducing the effects	• Indicated whether the effects can be mitigated? • Stated whether compensation is available, possible or acceptable?

3.4 REFERENCES

EPA (2015). *Advice Notes on Current Practice for preparing Environmental Impact Statements, Draft.* Environmental Protection Agency (EPA). Johnstown Castle, Wexford, Ireland.

EPA (2022). *Guidelines on the Information to be contained in an Environmental Impact Assessment Report*. Environmental Protection Agency (EPA). Johnstown Castle, Wexford, Ireland.

EU Commission (1999). *Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions*. Office for Official Publications of the European Communities, Luxembourg.