ENVIRONMENTAL PROTECTION AGENCY

AER / PRTR GUIDANCE DOCUMENT:

Guidance for the Quarrying Sector in compiling and reporting information for the Purposes of the PRTR Regulations

Version 2.0 February 2011

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1. Introduction

This guidance note is for operators of quarries that fall under the terms of the PRTR Regulations. It describes how to compile the relevant information on emissions and off-site transfers of waste materials from a facility prior to reporting via the EPA's AER / PRTR Electronic Reporting Worksheet on the Agency's website.

The EPA has provided a series of Guidance Documents to assist operators in making their returns. Two are of particular relevance to quarry operators and should be downloaded before making your PRTR returns:

- The *Step-by-Step Guide to reporting by non EPA-licensed facilities of AER / PRTR Emissions Data and the Annual Environmental Report* (AER / PRTR Guidance Document No. 2a) gives a concise procedure for completing your PRTR Returns;

- The EPA's *'AER / PRTR Electronic Reporting Workbook and Website User Manual (*AER / PRTR Guidance Document No. 5).

These and other relevant guidance notes are available on the EPA website at the following link: http://www.epa.ie/downloads/advice/aerprtr/.

1.1 The PRTR Regulations

The PRTR Regulations are the European Communities (European Pollutant Release and Transfer Register) Regulation 2007, S.I. No. 123 of 2007), which signed into Irish Law on 22 March 2007 the E-PRTR Regulation, (EC) No 166/2006, concerning the establishment of a European Pollutant Release and Transfer Register. As set out in the PRTR Regulations, releases of pollutants and off site transfers of waste by facilities operating in relevant industrial sectors will be reported by the EPA to the European E-PRTR website where:

1 the facility exceeds specified thresholds for the Capacity of the activity (Annex I of the PRTR Regulations) and

2 the facility exceeds specified thresholds for the quantities of the emissions (Annex II of the PRTR Regulations) and/or waste transfers (Article 5 1 (b) of the PRTR Regulations) from the facility.

1.2 Quarries and the PRTR Regulation

The PRTR Regulation applies to Opencast Mines and Quarries where the surface area of the facility effectively under extractive operations exceeds 25 Hectares.

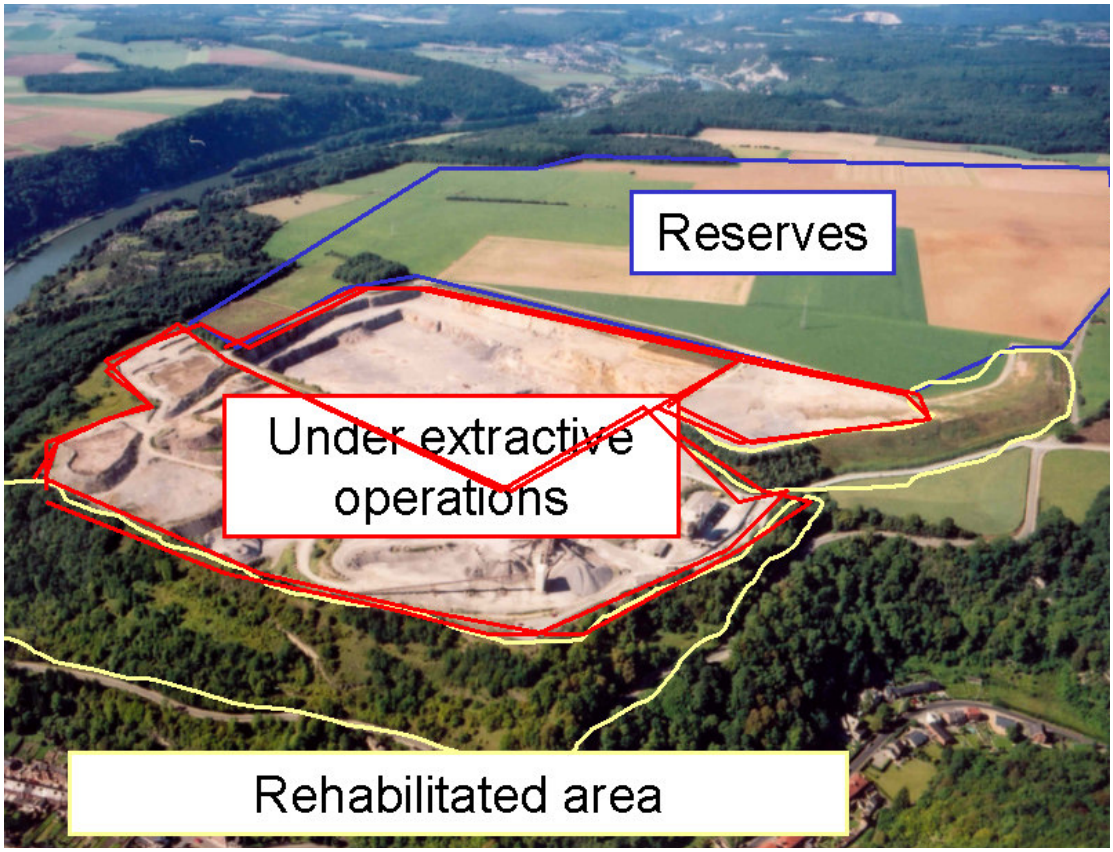
The term "Surface area effectively under extractive operation" means the surface of the area of the site reduced by:

1 The surface of the rehabilitated area, and

2 By the area of future excavation, and

Those portions of the surface area of the site that are occupied by downstream processing of aggregate, by incorporation into products such as concrete or macadam, are NOT included within the definition of the quarry area viz. the 25 Hectare threshold.

Note that all on-site transport, processing, storage and associated facilities, including settlement lagoons, ancillary activities including crushing, grading, milling and washing are considered standard elements of quarrying operations, and the surface area occupied by these functions IS INCLUDED within the "area effectively under extractive operations".



Source: FORTEA + MRW: DGRNE + ICEDD, 2007: "E-PRTR: Point of view and questions of the extractive sector about the EU Guidance Document".

All quarries falling within this definition are required to make annual reports to the EPA of their Releases (emissions) and off – site waste transfers. The first year for which reporting is required was the calendar year 2007.

A more comprehensive summary of the requirements of the PRTR Regulations are given in the EPA's guidance note *"Principles of AER / PRTR Reporting" (AER / PRTR Guidance Document No. 1)*, available at www.epa.ie.

1.3 Registering as a PRTR Facility

In order to report to the EPA via the AER / PRTR Electronic Reporting Worksheet for a specific Calendar Year, a facility must first confirm to the EPA that it will be making a report. The EPA will then create a facility specific worksheet and allocate a PRTR Identification Number. This will be sent back to the facility along with a Username and Access Password,

which will allow the download of a site specific PRTR Electronic Reporting Worksheet for completion and subsequent submission to the EPA.

1.4 Quarry-specific PRTR Emissions Calculation Toolset

The EPA has developed a Sector-Specific excel-based calculation tool, the "**Quarries Emissions Calculation Toolset V1.1 June 2009 .xls**". This tool is available on the EPA website and provides calculation methods (Code C) for making the necessary calculations in relation to releases (emissions) to Air and to Water.

The most relevant substances in releases to air from quarries are PM10 (dust less than 10 microns in diameter) and emissions derived from the utilisation of fuel in fixed and mobile plant. Calculation tools for these are provided, based on the best available scientific knowledge, expertise and experience in relation to quarry emissions.

Releases to water (and to sewer if applicable) will be calculated based on the total annual discharge volume and the loads of the relevant pollutant substances as measured in periodic monitoring of the discharge.

The excel workbook contains full user instructions as well as further details on the design and use of the tools.

1.5 Relationship with existing regulation of the Quarrying Sector

Implementation of the PRTR Regulations in respect of the quarrying sector is intended to be complementary with the existing regulatory framework for this industry in Ireland. This Guidance was compiled with reference to, and is compatible with, both the Irish Concrete Federation's "Environmental Code 2nd Edition, October 2005, and the Department of Environment, Heritage and Local Government's publication "Quarries and Ancillary Activities – Guidelines for Planning Authorities, April 2004.

It is likely that reviews of operational permits will directly and specifically incorporate the requirements of the PRTR Regulations; in the interim, it is suggested that quarry operators should consider the PRTR Regulations to be part of their regulatory framework.

In particular, quarry operators should review the nature and extent of record keeping and monitoring they undertake so that their ongoing annual reporting obligations, which apply to each operating year in which their operations exceed the 25 Hectare Threshold, can be fulfilled efficiently and with appropriate accuracy.

2. Completing the "Facility ID & Activities" Page

Facilities must initially contact the EPA at aerreturns@epa.ie. They will need to provide general details about the site as listed below which will be used to complete the "Facility ID & Activities" Page of the site specific excel workbook,

- Facility name
- Facility Address
- Contact name
- E-mail contact address for PRTR information and communication
- Coordinates of Location – In Irish Grid, available from GPS or from appropriately scaled map
- NACE code:

  NACE – for the main economic activity, enter the most appropriate code from Appendix 1 of this Guidance.

Once this information has been provided to the EPA a site-specific excel returns workbook will be created for you. You will be given a user name and password, which will allow you to download this workbook from the http://aer.epa.ie/reporting webpage.

Additional information, as listed below, may be completed by the facility on the Facility ID & Activities page at this point however, it is optional.

- Production Volume
- Number of Installations
- Number of Operating Hours in Year
- Number of Employees

3. Completing the "Releases" Pages

These pages require you to tell us how much of each relevant substance your installation has released to different media (air, water and, where relevant, sewer) during the calendar year. Sections 3.1 & 3.2 suggest which substances are most likely to have been released from your installation.

Please note the following:

- The list of substances on the EPA Electronic Reporting Worksheet reporting form includes all 91 substances released from all processes reporting to the E-PRTR. The majority will not be applicable for mines and quarries.
- A sector specific list of substances will be specified in Section A of the releases pages.

- Remaining PRTR substances will be listed in Section B of these pages.
- If you are aware that your installation has released additional substances please include these in the Section C of these pages.

For each substance reported you need to determine the amount released

All annual emission quantities from individual facilities shall be established by one of the following three designated methods:

- **CODE M - EMISSION DATA BASED ON MEASUREMENTS**
- **CODE C - EMISSION DATA BASED ON CALCULATIONS**
- **CODE E - EMISSION DATA BASED ON NON-STANDARDISED ESTIMATION**

Measurement is the preferred method of quantification, but there are many circumstances where this is not feasible or not practicable. The choice of determination is a matter for each operator, and each operator must be in a position to justify their use of specific approaches during audits under the PRTR Regulations.

The EPA Sector-Specific excel-based "**Quarries Emissions Calculation Toolset V1.1 June 2009 .xls**", available on the EPA website, provides calculation methods (Code C) for making the necessary calculations.

Quarry operators should use this calculation toolset unless they have more precise site-specific information available to them.

Please ensure that you report the figures in the appropriate units, which are

- **For releases to air, water or sewer:** **kilogrammes / annum**
- **For waste transfers:** **tonnes / annum**

3.1 Releases to air

These are the substances that quarries are most likely to release to air:

PRTR Pollutant Number	Pollutant name	PRTR Reporting Threshold kg / Annum
1	Methane (CH4)	100,000
2	Carbon monoxide (CO)	500,000
3	Carbon dioxide (CO2)	100,000,000
5	Nitrous oxide (N2O)	10,000
6	Ammonia (NH3)	10,000
7	Non-methane volatile organic compounds (NMVOC)	100,000
8	Nitrogen oxides (NOx/NO2)	100,000
11	Sulphur oxides (SOx/SO2)	150,000
17	Arsenic and compounds (as As)	20
18	Cadmium and compounds (as Cd)	10
19	Chromium and compounds (as Cr)	100
20	Copper and compounds (as Cu)	100
22	Nickel and compounds (as Ni)	50
23	Lead and compounds (as Pb)	200
24	Zinc and compounds (as Zn)	200
80	Chlorine and inorganic compounds (as HCl)	10,000
86	Particulate matter (PM10)	50,000

These are the "Sector-Specific list of Air pollutants" and will be listed in Section A of the Releases to Air page of the reporting Workbook.

All emissions, where applicable, of these substances must be reported to EPA under the PRTR Regulations.

Reporting to the European Commission will only include those emissions which exceed these thresholds from facilities which themselves fall under the terms of the PRTR Regulations.

3.2 Releases to waters

These are the substances you are most likely to release to water:

PRTR Pollutant Number	Pollutant	PRTR Reporting Threshold kg / Annum
12	Total nitrogen	50,000
13	Total phosphorus	5,000
17	Arsenic and compounds (as As)	5
18	Cadmium and compounds (as Cd)	5
19	Chromium and compounds (as Cr)	50
20	Copper and compounds (as Cu)	50
22	Nickel and compounds (as Ni)	20
23	Lead and compounds (as Pb)	20
24	Zinc and compounds (as Zn)	100
76	Total organic carbon (TOC) (as total C or COD/3)	50,000
79	Chlorides (as total Cl)	2,000,000

These will be listed in Section A of the Releases to Water page.

All Emissions of these substances, where applicable, must be reported to EPA under the PRTR Regulations. Reporting to the European Commission will only include those emissions which exceed these thresholds from facilities which themselves fall under the terms of the PRTR Regulations. See Section 1 in this regard.

3.3 Releases to sewer

If your facility's trade effluent is removed from the site to a wastewater treatment plant by tanker or discharged to sewer, complete the relevant offsite transfer to wastewater or sewer page of the excel workbook. The same reporting requirements in relation to relevant substances, reporting thresholds etc. apply to Wastewater or Sewer as with releases to air or water.

In addition, the EPA's Quarry-specific calculation toolset can be used for determining annual mass releases to sewer as well as to water.

3.4 Releases to land

Quarries are unlikely to have any releases to land; the activities falling under the definition of "Releases to Land" in the PRTR Regulation do not apply to Ireland.

3.5 Treatment & Transfers of Waste

Quarries need to report any waste sent off site. Both the type of waste and the type of disposal or recovery operation it is being sent to requires reporting.

The facilities Waste Transfer records should contain the information to complete this section. It is recommended that a running total of transfers through the year are maintained, so this is task is easier to complete in future years.

Facilities should classify their waste according to European Waste Catalogue (EWC) codes. The worksheet allows the generation of codes by double-clicking on the "European Waste Code" cell for each entry; this will collate the full EWC code.

A list of EWC codes considered to be the most likely to apply to quarries is given in Appendix 2 of this Guidance. A complete list of codes can be downloaded from the Agency's website.

All waste transfers must be reported to EPA under the PRTR Regulations. As with emissions to air, water and sewer, reporting to the European Commission's E-PRTR Website is only required where prescribed thresholds are exceeded by relevant operators. Hazardous waste transfers will only be reported to the E-PRTR Website if more than 2 tonnes has been sent off site in any calendar year. For non hazardous waste there is an annual reporting threshold of 2,000 tonnes.

Appendix 1: NACE Codes

NACE Group Code: 08 Other Mining and Quarrying

NACE Code	Description
08.11	Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate
08.12	Operation of gravel and sand pits; mining of clays and kaolin
08.91	Mining of chemical and fertiliser minerals
08.99	Other mining and quarrying n.e.c.

Appendix 2: European Waste Catalogue and Hazardous Waste List -Shortened list of possible codes applicable to the Irish Quarrying Sector

(* denotes hazardous code) (Full list available on the EPA website)

EWC Code	Description
01	**WASTE RESULTING FROM EXPLORATION, MINING, QUARRYING, AND PHYSICAL AND CHEMICAL TREATMENT OF MINERALS**
01 01	**wastes from mineral excavation**
01 01 01	wastes from mineral metalliferous excavation
01 01 02	wastes from mineral non-metalliferous excavation
01 03	**wastes from physical and chemical processing of metalliferous minerals**
01 03 04*	acid-generating tailings from processing of sulphide ore
01 03 05*	other tailings containing dangerous substances
01 03 06	tailings other than those mentioned in 01 03 04 and 01 03 05
01 03 07*	other wastes containing dangerous substances from physical and chemical processing of metalliferous minerals
01 03 08	dusty and powdery wastes other than those mentioned in 01 03 07
01 03 09	red mud from alumina production other than the wastes mentioned in 01 03 07
01 03 99	wastes not otherwise specified
01 04	**wastes from physical and chemical processing of non-metalliferous minerals**
01 04 07*	waste containing dangerous substances from physical and chemical processing of non-metalliferous minerals
01 04 08	waste gravel and crushed rocks other than those mentioned in 01 04 07
01 04 09	waste sand and clays
01 04 10	dusty and powdery wastes other than those mentioned in 01 04 07
01 04 11	wastes from potash and rock salt processing other than those mentioned in 01 04 07
01 04 12	tailings and other wastes from washing and cleaning of minerals other than those mentioned in 01 04 07 and 01 04 11
01 04 13	waste from stone cutting and sawing other than those mentioned in 01 04 07
01 04 99	waste not otherwise specified
01 05	**drilling muds and other drilling wastes**
01 05 04	freshwater drilling muds and wastes
01 05 05*	oil-containing drilling muds and wastes
01 05 06*	drilling muds and other drilling wastes containing dangerous substances
01 05 07	barite-containing drilling muds and wastes other than those mentioned in 01 05 05 and 01 05 06

01 05 08	chloride-containing drilling muds and wastes other than those mentioned in 01 05 05 and 01 05 06
01 05 99	wastes not otherwise specified
13	**OIL WASTES AND WASTES OF LIQUID FUELS** (except edible oils, and those in chapters 05, 12 and 19)
13 01	**waste hydraulic oils**
13 01 01*	hydraulic oils, containing PCBs (15)
13 01 04*	chlorinated emulsions
13 01 05*	non-chlorinated emulsions
13 01 09*	mineral-based chlorinated hydraulic oils
13 01 10*	mineral-based non-chlorinated hydraulic oils
13 01 11*	synthetic hydraulic oils
13 01 12*	readily biodegradable hydraulic oils
13 01 13*	other hydraulic oils
13 07	**wastes of liquid fuels**
13 07 01*	fuel oil and diesel
13 07 02*	petrol
13 07 03*	other fuels (including mixtures)
16	**WASTES NOT OTHERWISE SPECIFIED IN THE LIST**
16 01 07*	oil filters
16 06	**batteries and accumulators**
16 06 01*	lead batteries
16 06 02*	Ni-Cd batteries
16 06 03*	mercury-containing batteries
16 06 04	alkaline batteries (except 16 06 03)
16 06 05	other batteries and accumulators
16 06 06*	separately collected electrolyte from batteries and accumulators
20	**MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS**
20 01 37*	wood containing dangerous substances
20 01 38	wood other than that mentioned in 20 01 37
20 03 01	mixed municipal waste