

Section 10: AIR

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10 AIR

10.1 Introduction

This section of the remedial Environmental Impact Assessment Report (rEIAR) assesses any potential impact the quarrying and ancillary activities at the site may have had on the surrounding environment, with regards to the receiving air environment.

For quarrying related activities, the most likely emission to the air environment is dust, which arises predominantly from the excavation, processing and transporting of aggregate. These sources are generally dispersed sources rather than specific point sources and this dictates the measures required to mitigate dust related impacts

Existing mitigating measures are reviewed, and further measures proposed where required, to remove or reduce any potential impacts identified.

10.2 Methodology

The impact of dust is usually monitored by measuring rates of dust deposition. According to the EPA Guideline Document entitled Environmental Management in the Extractive Industries (April 2006), there are currently no Irish statutory standards or EPA guidelines relating specifically to dust deposition thresholds for inert mineral dust. There are a number of methods to measure dust deposition but only the German TA Luft Air Quality Standards (TA Luft, 1986) specify a method of measuring dust deposition – the Bergerhoff Method (German Standard VDI 2119, 1972) – with dust nuisance. It is the only enforceable method available. On this basis, the EPA recommend a dust deposition limit value of 350 mg/m²/day (Table 10.1) (when averaged over a 30-day period) has been adopted at site boundaries associated with quarrying related activities.

The then Department of Environment, Heritage and Local Government (DoEHLG) published 'Quarries & Ancillary Activities: Guideline for Planning Authorities' (2004) also recommends the TA Luft dust deposition limit is adopted at site boundaries near quarry developments. In addition, the DoEHLG have identified that residents within 500m of the dust source can potentially be affected from emissions, with more severe concerns about dust within 100m of the source.

The assessment involved;

- Site walkovers and assessment of site
- Dust Monitoring

10.2.1 References

- Survey of Tinney's Quarry. *Digital Land Surveyors Ltd, 2022*
- TA Luft (1986) Technical Instructions on Air Quality Control – TA Luft in accordance with Article 48 of the Federal Emission Control Law (BImSchG) dated 15th March 1974 (BGBl, I p. 721). *Federal Ministry for Environment, Bonn 1986 and amendments.*
- *Department of the Environment, Heritage and Local Government (2004) Quarries and Ancillary Activities, Guidelines for Planning Authorities.*
- *Department of Environment, Community and Local Government (2013) Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment*

10.3 Impact Assessment Methodology

The nature of the potential environmental impacts on the land, soil and geology is based on the matrix presented in Table 10.1 below. This table is derived from the EPA Guidelines on information to be included in Environmental Impact assessment Reports (May 2022).

Table 10.1: Description of Potential Environmental Impacts

Quality of Effects	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	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	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	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	Momentary Effects Effects lasting from seconds to minutes
	Brief Effects Effects lasting less than a day

Frequency of Events	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 the resultant effect is of greater significance than the sum of its constituents, (e.g. combination of SOx and NOx to produce smog).

10.4 Existing Environment

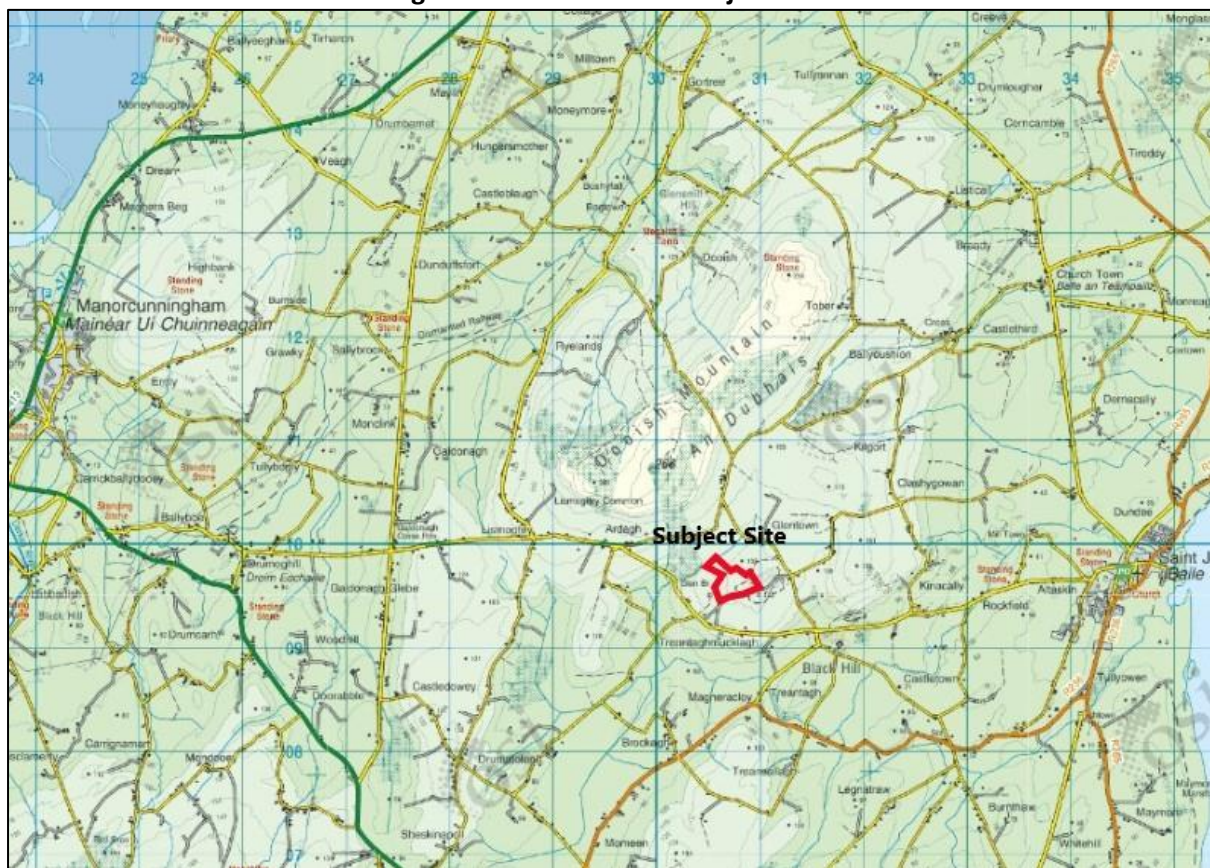
10.4.1 Site Description & Location

The application site is c. 9.9 hectares in size and has been in use as a quarry, extracting and processing material. Historical activity has led to the creation of a quarry void with redundant and active quarry faces and abandoned quarry areas.

The subject site is located approximately 4 km west of the town of St Johnston in east Co. Donegal. The site is located in the townland of Trentamucklagh and is served by the local road, L-5414. Access to the quarry is off this local road via a concrete and hardcore access road.

The site is surrounded by agricultural land on all sides apart from to the east where a quarry face separates the site and a separate quarry operated by a different owner. An extensive area of commercial forestry lies to the north and northwest of the site, flanking the slopes of Doish Mountain. The application site location is outlined in Figure 10.1.

Figure 10.1: Location of Subject site



CYAL50244901 © Ordnance Survey Ireland/Government of Ireland

10.4.2 Topography and Drainage

The site is c.9.9 hectares in size and has been developed as a stone quarry. Extraction has taken place over most of the footprint of the site (7.7 hectares). The entire site is located on the upper western slopes of a small hill, the summit of which lies immediately south of the site at approximately 140 mOD. The highest point of the site is along the southeast boundary where the vegetated berms are at 136 mOD. The boundary between the application site and the quarry to the north is a rocky ridge at approximately 133 mOD. The lowest point of the site is the quarry deck at approximately 106 mOD. A significant promontory remains in the centre of the site at approximately 125-129 mOD.

Drainage is to the quarry void and to Settlement Ponds 1 & 2. There is one outflow from the site to the north where discharge is to a tributary of the St Johnston Stream.

10.4.3 Land Use

The site is located in a rural area with sporadic on-off houses and farmsteads. The surrounding countryside is undulating, and land use is predominantly agriculture with some isolated blocks of commercial forestry. More extensive forestry is more prevalent in higher ground north of the site on the slopes of Dooish Mountain.

Current land use for the application site is as a working quarry. Extraction and processing take part in the central part of the site on the quarry deck within the main quarry void. Large parts of previous quarry workings within the site are partially recolonised with pioneer vegetation, especially along the western boundary and northwest portion of the site. The large settlement pond represents a large part of the site occupying a footprint of approximately 0.87 hectares. Other ponds and wetland areas throughout the site account for approximately 0.38 hectares of land use.

The Ordnance Survey of Ireland historical map series was examined for land use on the application site. In the series mapped between 1829-1841 the site is seen as partially excavated ground. The main excavation seen is northeast of the site in the townland of Glentown, however the collection of excavations is labelled as Glentown Slate Quarries and appears to cover quarry pits in the townlands of Trentamucklagh and Ardagh. The earliest published record of quarrying in the general area is in 1786. Quarrying activity on the site has been sporadic since the mid 1840's and the current applicant started excavation and processing on the site in 1978.

10.5 Dust Monitoring

To assess the likely dust generation and deposition at the site boundaries, four dust monitors were installed in January 2022. The monitors were placed at the existing extraction area boundaries and were changed monthly over the five-month study period. The dust monitoring report is attached as Appendix 10.1.

The location of the dust monitors is shown below in Figure 10.2 below.

Figure 10.2: Dust Monitoring Locations

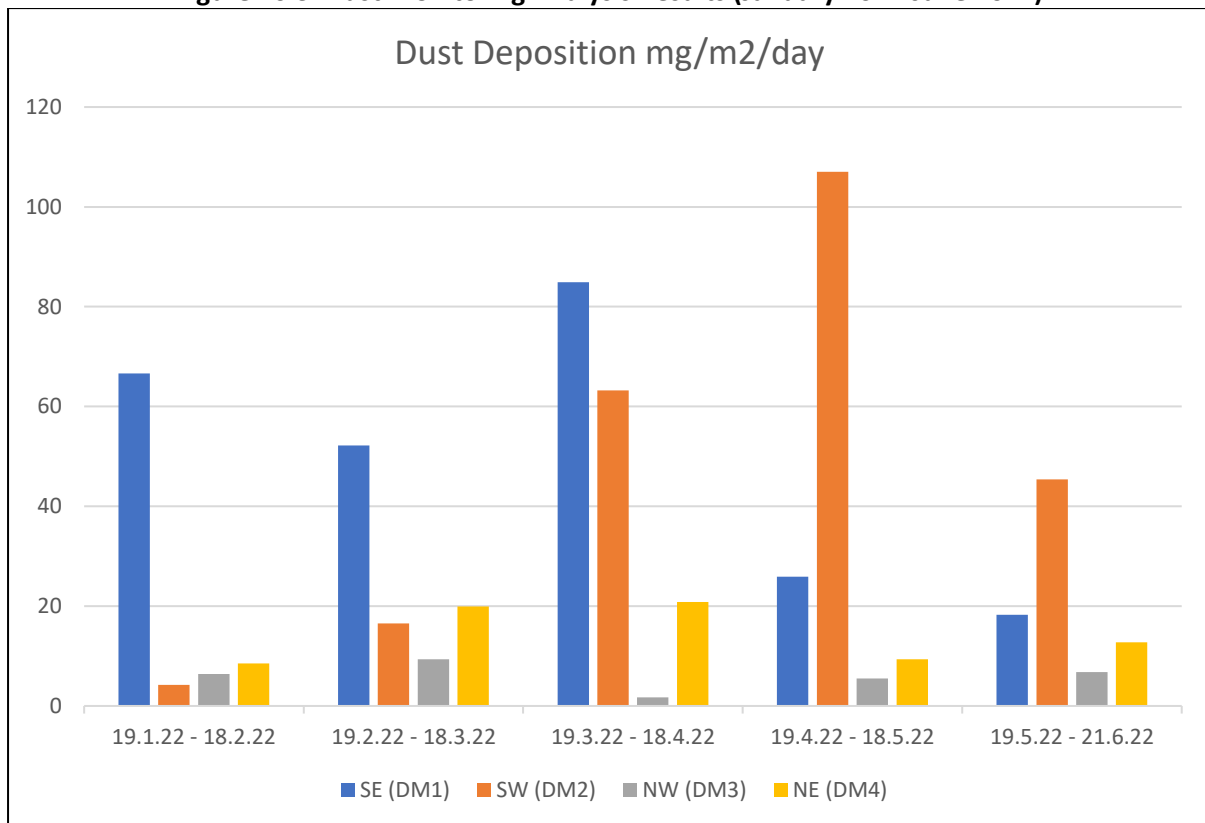


A summary of the dust deposition results is given in Table 10.2 below and illustrated graphically in Figure 10.3 below.

Table 10.2: Dust Monitoring Results (January 2022-June 2022)

Analytical Period	Dust Monitor 1 (SE Boundary) mg/m ² /day	Dust Monitor 2 (SW Boundary) mg/m ² /day	Dust Monitor 3 (NW Boundary) mg/m ² /day	Dust Monitor 4 (NE Boundary) mg/m ² /day
19.01.2022 – 18.02.2022	66.64	4.24	6.37	8.49
19.02.2022 – 18.03.2022	55.21	16.55	9.34	19.95
19.03.2022 – 18.04.2022	84.9	63.2	1.7	20.8
19.04.2022 – 18.05.2022	25.9	107	5.52	9.34
19.05.2022 – 21.06.2022	18.25	45.42	6.79	12.73

Figure 10.3: Dust Monitoring Analysis Results (January 2022-June 2022)



It can be seen from Table 10.2 and Figure 10.3 that the dust deposition results are well below the guideline threshold of 350 mg/m²/day.

10.6 Characteristics of the Development

The development of the site as a quarry has been sporadic but ongoing for perhaps 200 years. Activities on site by the current applicant have been relatively simple in quarrying terms with the extraction, crushing and screening of rock and transport to market. The requirement for blasting has been infrequent and most of the extraction has taken place by mechanical means.

Mobile crushers/screeners have been employed moving around the site following extraction activity. Stockpiles of product were generally located near the screeners and transport to market was via rigid lorry. Customers could also bring their own transportation and purchase product directly from the site. No washing of product took place on this site.

Effluent treatment has been by settlement. Current effluent generated in the quarry void is pumped to Settlement Pond 1 for settlement treatment and then flows through Settlement Pond 2 for further treatment before discharge off site to a tributary of the St Johnston Stream. The site discharge has been under licence (Lwat67) from Donegal County Council since 2009. Noise abatement and dust control measures have been employed by the applicant for all activities on site.

Mature landscaped berms have been created on the perimeter of the site to screen workings. Currently the quarry employs 4 persons and output is estimated at approximately 5 loads per day. IN the past during peak times there may have been up to 10 people working in the quarry and output would have peaked during these times at 20 loads per day.

Further details on the characteristics of development are provided in *Section 3, Project Description*, of this rEIAR.

10.7 Impact Assessment

The following activities associated with the development are the most likely to have generated dust:

- Movement of vehicles along haul roads
- Stripping of subsoil and overburden
- Loading and movement of overburden
- Extraction of rock
- Crushing and screening of product
- Loading of materials
- Windblow on fine product stockpiles

10.7.1 Wind

Wind is of key importance for both the generation and dispersal of air borne pollutants including dust. According to Met Eireann the average hourly wind speed in Donegal experiences significant seasonal variation over the course of the year. The windier part of the year lasts for 5.6 months, from October 11 to March 29, with average wind speeds of more than 14.0 miles per hour. The calmer time of year lasts for 6.4 months, from March 29 to October 11.

Table 10.3 shows the number of days with mean wind speeds exceeding 15 m/s for 10 minutes or more for the past three complete years.

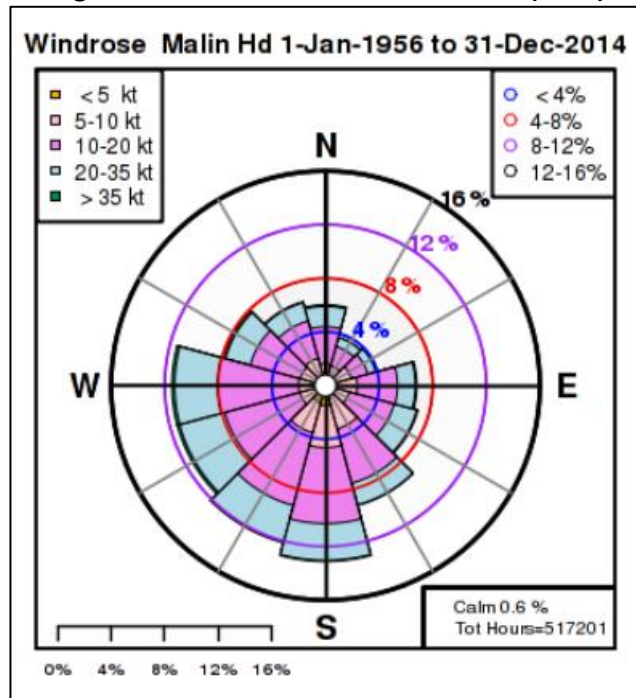
Table 10.3: No of days with 10 min wind speeds > 15 m/s.

Number of days with a maximum 10-min. mean wind speed >= 15m/s												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2021	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
2020	19	26	10	3	4	4	5	3	5	15	11	15
2019	11	10	13	9	1	3	0	4	7	9	10	16
2018	21	13	11	9	2	2	1	1	9	9	11	11

(Met Eireann)

The predominant wind direction is from the southwest. Figure 10.4 shows the wind rose for Malin Head (50 km north of the application site).

Figure 10.4: Wind Rose for Malin Head (2014)



Met.ie

10.7.2 Dust Deposition

Dust generation rates depend on the site activity, particle size, the moisture content of the material and weather conditions. Dust emissions are dramatically reduced where rainfall has occurred due to the cohesion created between dust particles and water and the removal of suspended dust from the air. It is typical to assume no dust is generated under "wet day" conditions where rainfall greater than 0.2 mm has fallen. Large particle sizes (greater than 75 microns) fall rapidly out of atmospheric suspension and are subsequently deposited in close proximity to the source. Particle sizes of less than 75 microns are of interest as they can remain airborne for greater distances and give rise to the potential dust nuisance at the sensitive receptors. This size range would broadly be described as silt. Emission rates are normally predicted on a site-specific particle size distribution for each dust emission source.

The Met Eireann report on the weather of Spring 2022 (March, April & May) concludes that spring was dry and mild with all three months having mostly above average temperatures and below average rainfall.

As noted in Section 10.5, Dust Monitoring, dust deposition levels on the site boundary are in compliance with guideline values of 350 mg/m²/day. In fact, most of the monitoring results were considerably below the guideline value.

Output and activity in the quarry have varied over the recent past (1978- present). Current activity levels are likely to represent average output over the period. According to the applicant there were times production was significantly less than current levels and also times when production may have been significantly more than current levels.

During times of significantly increased production it is unlikely that dust deposition would have breached the 350 mg/m²/day limit due to the mitigation measures that have been in place.

The overall impact from the site over the monitoring period has been imperceptible to the local air environment.

10.7.3 Cumulative Impacts

The application site must also be considered in association with other developments located within or close to the application site.

10.7.3.1 Other Developments

A search of the planning portal of the Donegal County Council website revealed no planned development which may result in significant cumulative impact in the vicinity of the application site. The application site is situated in a rural environment where the two main land uses are low intensity livestock farming and private commercial forestry.

There is another stone quarry adjoining the application site to the east which is considered for cumulative impact. The traffic routes for the two quarries are in separate directions and dust deposition levels noted in the survey for the application site would indicate that there is no significant cumulative effect to consider.

10.7.4 Do Nothing Option

If the development to extract rock and process aggregate is not granted substitute consent then local construction end users will be forced to source quarry product and aggregate from further afield. This will result in a higher carbon footprint for these products. The provision of 4 local jobs and the secondary benefits that this brings to the local community will cease if the project does not achieve planning permission.

10.8 Mitigation Measures

The following mitigation measures have been in place to minimise the impacts of quarrying activity on the air quality of the application site and surroundings:

- Dust monitoring will continue to be carried out quarterly at the designated monitoring locations if required
- The timing of operations optimised in relation to meteorological conditions
- Material in outdoor stockpiling will be conditioned with water to minimise dust during dry and windy conditions. In addition, stockpiles will be sited to take advantage of shelter from wind
- Screening berms grass-seeded and planted to eliminate wind-blown dust
- Internal haul roads compacted and maintained
- A water bowser/sprayer will be available at all times to minimise dust during dry and windy conditions
- Speed restrictions of 20 kph maintained to limit generation of fugitive dust (within site and access road)

- Wheel-wash is proposed at the entrance/exit of the quarry

10.9 Monitoring

A re-instatement of the dust monitoring points to be implemented if required for ongoing monitoring purposes.

10.10 Residual Impacts

Residual impacts are those that remain after the implementation of the mitigation measures. After implementation of the mitigation measures the residual effects are assessed as imperceptible to the local air environment.

10.11 Technical Difficulties

There were no technical difficulties encountered.

10.12 Determination of Significance of Impact Pre-mitigation

Impact	Receptor	Description of Impact (Character/Magnitude/Duration/Probability/Consequences) Negligible - High	Existing Environment (Significance / Sensitivity) Negligible -High	Significance Imperceptible - Profound
Dust deposition	Local dwellings	Low	Low	Slight
Dust within the air	Human health	Low	Medium	Moderate
Dust Deposition	Local vegetation	Low	Low	Slight

10.13 Summary of Mitigation Measures

Summary of Mitigation Measures Implemented/Proposed
Dust monitoring will continue to be carried out monthly at the designated monitoring locations if required
The timing of operations optimised in relation to meteorological conditions
Material in outdoor stockpiling will be conditioned with water to minimise dust during dry and windy conditions. In addition, stockpiles will be sited to take advantage of shelter from wind
Screening berms grass-seeded and planted to eliminate wind-blown dust
Internal haul roads compacted and maintained
A water bowser/sprayer will be available at all times to minimise dust during dry and windy conditions
Speed restrictions of 20 kph maintained to limit generation of fugitive dust (within site and access road)
Wheel-wash is proposed at the entrance/exit of the quarry

10.14 Determination of Significance of Impact Following Mitigation

Impact	Receptor	Description of Impact (Character/Magnitude/ Duration/Probability/ Consequences) Negligible - High	Existing Environment (Significance / Sensitivity) Negligible -High	Significance Imperceptible - Profound
Dust deposition	Local dwellings	Low-Negligible	Low	Imperceptible
Dust within the air	Human health	Low-Negligible	Low	Imperceptible
Dust Deposition	Local vegetation	Low-Negligible	Low	Imperceptible

10.15 Impact Assessment Conclusion

The impact on air quality and in particular dust generation and dust deposition from the site is assessed as having no significant negative effects.

APPENDIX 10.1: Dust Monitoring Report



Dust Monitoring Report

Dust Monitoring Survey for Tinneys Quarry,
Trentamucklagh, St Johnston, Co. Donegal.

Greentrack Environmental Consultants

June 2022

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1 INTRODUCTION

Tinney's Quarry is a well-established quarry enterprise supplying aggregate in Northeast Donegal. An application for substitute consent for quarrying activity is to be lodged with An Bord Pleanála before 18th July 2022. A remedial EIAR and remedial NIS are to accompany the application.

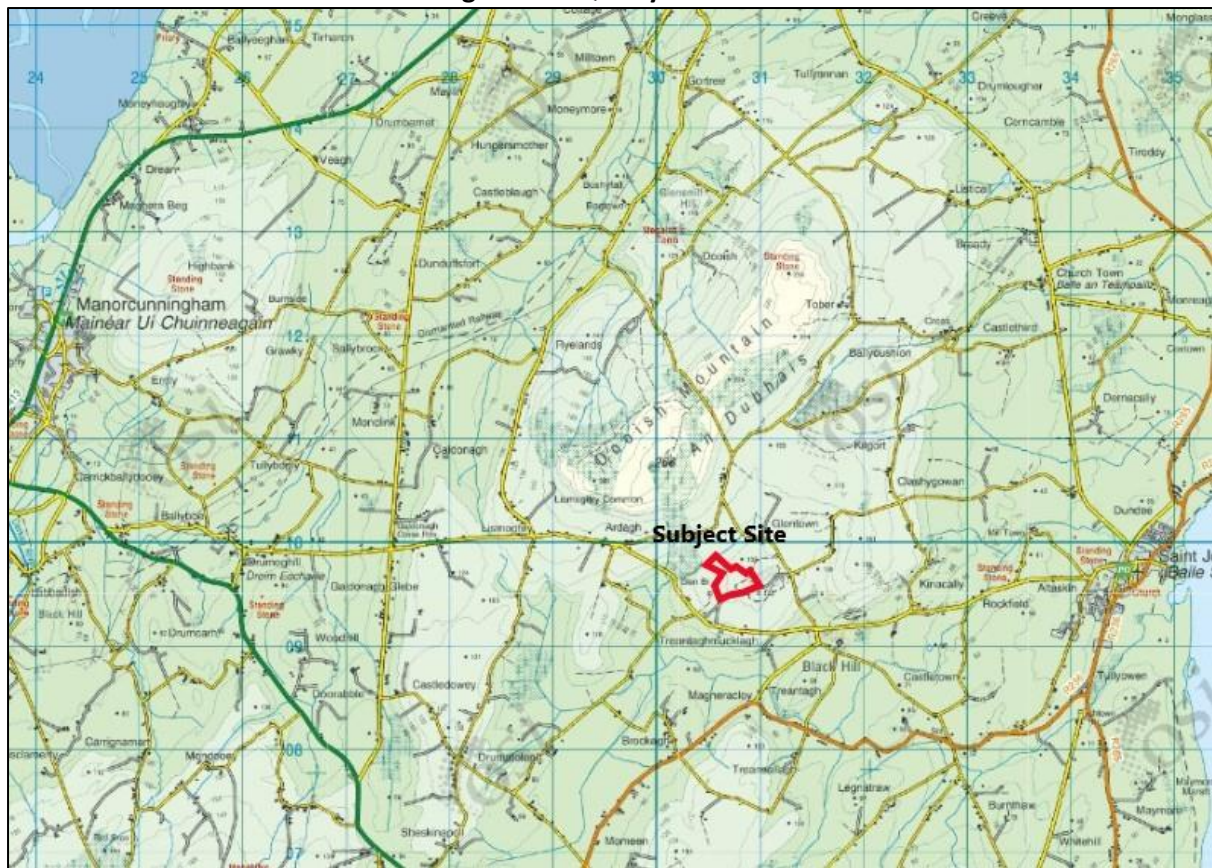
Greentrack consultants were engaged by Tinney's Quarry to carry out a dust monitoring survey at their Quarry site, Trentamucklagh, St Johnston Co. Donegal. The purpose of this dust monitoring survey is to help inform the remedial EIAR and remedial NIS.

2 SITE DESCRIPTION

2.1 Location

The site lies approximately 4 km west of the village of St Johnston in east Co. Donegal. The quarry is accessed via a concrete and hardcore access track off the local road (L-5414). The location of the quarry in local context is shown on Figure 2.1 below.

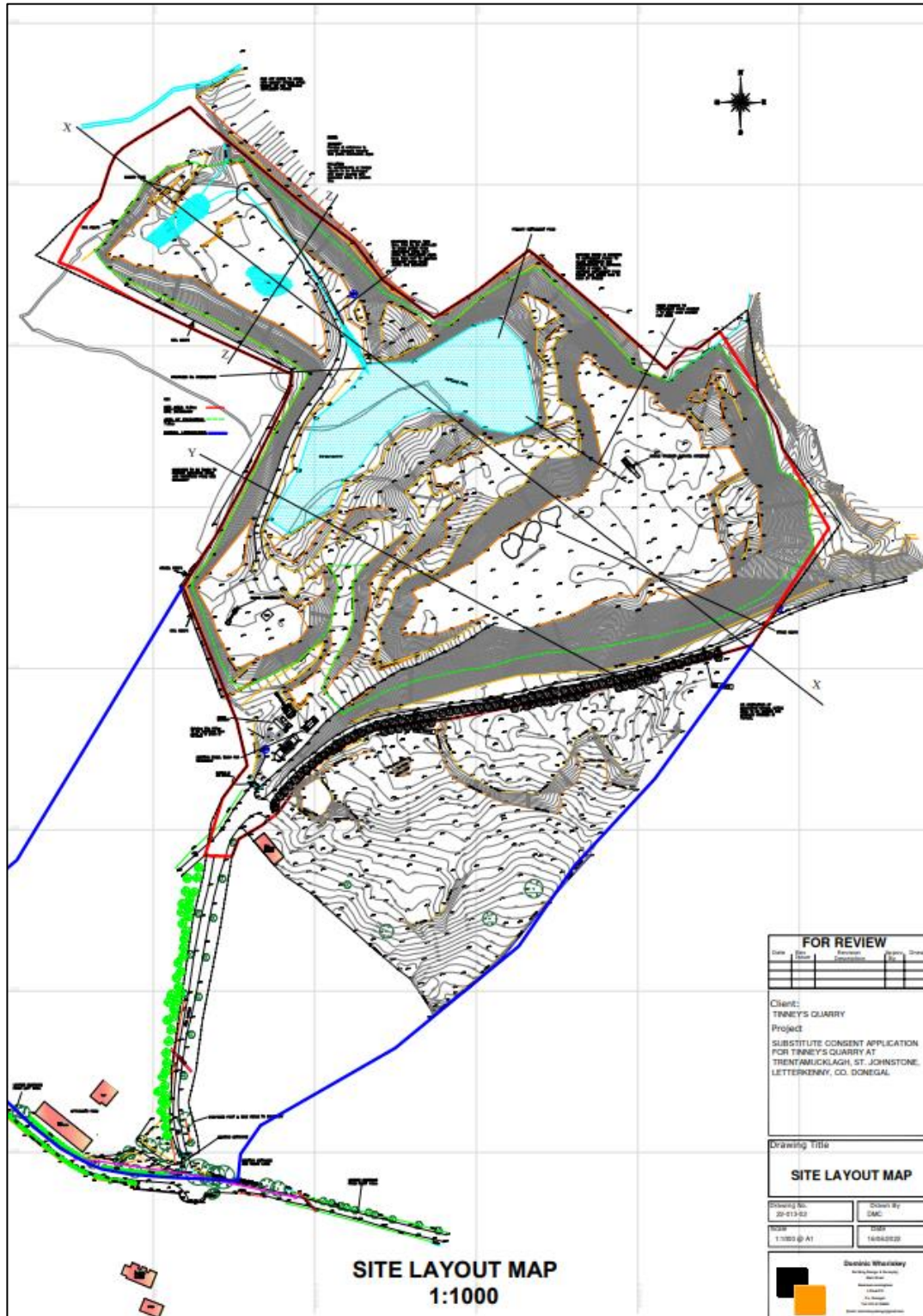
Figure 2.1: Quarry Location



CYAL50244901 © Ordnance Survey of Ireland/ Government of Ireland

Tinney's Quarry are applying for substitute consent permission for the extraction and processing of rock on site. The red line boundary to which the application refers is shown in the site layout in Figure 2.2 below.

Figure 2.2: Site Layout and Red Line Boundary



Map supplied by Dominic Whorisky Architects

The quarry is located on the top of a hill, approximately 136 mOD and is surrounded by agricultural land on all sides except to the north where it is separated by steep quarry faces from another quarry operated independently to Tinney's Quarry.

2.2 Site Description

The Application site is approximately c. 9.9 Ha in size and irregular in shape. The area of previous and current extraction is approximately 7.7 Ha.

On site there is a weighbridge and container unit near the entrance. There are several redundant haul roads throughout the northwest portion of the quarry and one main haul route leading from the working quarry deck to the quarry entrance. There is a mobile crusher/grader, loading shovel and several excavators on the quarry deck. No washing of product occurs on site.

2.3 Quarrying Operations

The main products from the quarry are 4-inch and 6-inch stone, quarry dust and quarry fill. Rock is extracted by mechanical means. Blasting is proposed to take place under licence approximately twice a year depending on demand (and subject to a future grant of permission). Extracted rock is crushed to the required size grade in a mobile crusher and then stockpiled ready for transport off site to the end user.

A water management system including settlement ponds ensures runoff from the quarry is treated to a high standard before discharge off site. Quarry discharge is currently monitored periodically by Greentrack Environmental Consultants and has been under licence from Donegal County Council (LWat67) from 28/5/2009.

3 DUST MONITORING METHODOLOGY

Four dust monitoring stations have been installed on site.

- One Dust Monitor (DM 1) was placed along the south-eastern boundary of the site.
- A second Dust Monitor (DM 2) was placed near the entrance to the quarry on top of the berm on the south-west site boundary.
- A third Dust Monitor (DM 3) was placed in the north-western portion of the quarry.
- The fourth Dust Monitor (DM 4) was placed below the remaining quarry face along the north-eastern site boundary.

The positions of these dust monitors are indicated on Figure 3.1.

Figure 3.1: Dust Monitoring Locations



Photographs of the dust monitors in position are shown in Photographs 3.1 – 3.4 below.

Photograph 3.1: Location of Dust Monitor 1 on the south-eastern boundary of the site



Photograph 3.2: Dust Monitor 2, placed near the entrance of the quarry



Photograph 3.3: Dust Monitor 3 in the north-western portion of the site



Photograph 3.4: Dust Monitor 4 in place along the north-eastern boundary of the site



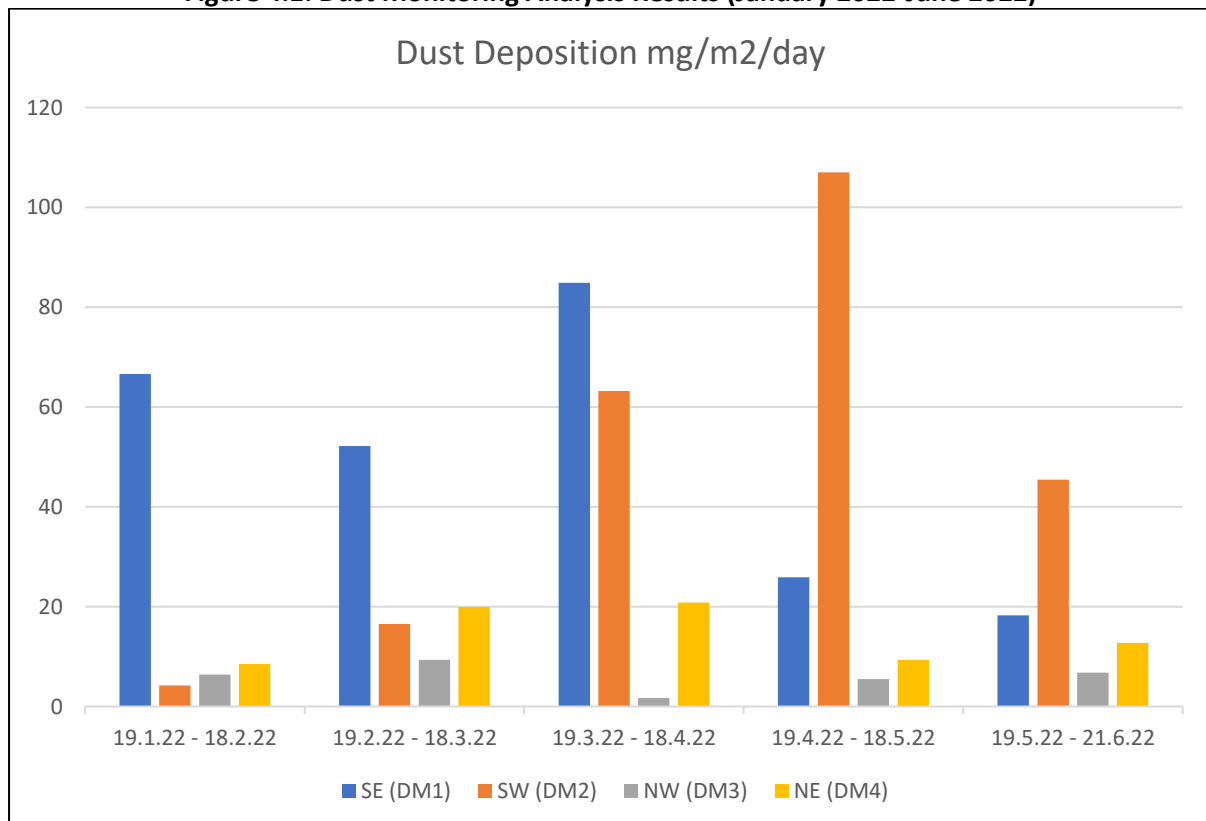
4 DUST MONITORING ASSESSMENT

The dust monitors were left in place for 30 days (+/- 2 days). The dust collected was sent to Aqualab in Killybegs for Bergerhoff dust analysis. This process was repeated until 21st June 2022. The results for the past five months, from January 2022 – June 2022, are presented in Table 4.1 and Figure 4.1 below. The analyses certificates from Aqualab are presented in Appendix 1.

Table 4.1: Dust Monitoring Results (January 2022-June 2022)

Analytical Period	Dust Monitor 1 (SE Boundary) mg/m ² /day	Dust Monitor 2 (SW Boundary) mg/m ² /day	Dust Monitor 3 (NW Boundary) mg/m ² /day	Dust Monitor 4 (NE Boundary) mg/m ² /day
19.01.2022 – 18.02.2022	66.64	4.24	6.37	8.49
19.02.2022 – 18.03.2022	55.21	16.55	9.34	19.95
19.03.2022 – 18.04.2022	84.9	63.2	1.7	20.8
19.04.2022 – 18.05.2022	25.9	107	5.52	9.34
19.05.2022 – 21.06.2022	18.25	45.42	6.79	12.73

Figure 4.1: Dust Monitoring Analysis Results (January 2022-June 2022)



4.1 Interpretation of Results

Dust generation rates depend on the site activity, particle size, the moisture content of the material and weather conditions. Dust emissions are dramatically reduced where rainfall has occurred due to the cohesion created between dust particles and water and the removal of suspended dust from the air. It is typical to assume very little dust is generated under "wet day" conditions where rainfall greater than 0.2 mm has fallen.

Large particle sizes (greater than 75 microns) fall rapidly out of atmospheric suspension and are subsequently deposited in close proximity to the source. Particle sizes of less than 75 microns are of interest as they can remain airborne for greater distances and give rise to the potential dust nuisance at the sensitive receptors.

Information supplied by the applicant states that dust generated within the quarry void rarely escapes the void.

The guidelines applied to the extractive industry are widely used as best practice (DoEHLG (2004)). Threshold limits are usually indicated at 350 mg/m²/day at the boundary of a site for acceptable dust deposition levels.

It is noted that the dust deposition monitoring has been in compliance with the 350 mg/m²/day DoEHLG (2004) threshold limits.

The overall impact of activities on site, in terms of dust emissions, has been imperceptible to the local air environment beyond the site boundaries.

References

Department of the Environment, Heritage and Local Government (2004) Quarries and Ancillary Activities, Guidelines for Planning Authorities.

Department of Environment, Community and Local Government (2013) Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment

Department of Communications, Climate Action and Environment (2017) Draft National Mitigation Plan.

Environmental Protection Agency (2006) Environmental Management in the Extractive Industry: Guidelines for Regulators.

TA Luft (1986) Technical Instructions on Air Quality Control – TA Luft in accordance with Article 48 of the Federal Emission Control Law (BImSchG) dated 15th March 1974 (BGBl, I p. 721). Federal Ministry for Environment, Bonn 1986 and amendments.

APPENDIX 1: Aqualab Berghoff Dust Analysis



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CERTIFICATE OF ANALYSIS

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Customer: Greentrack 4 Roe House, Dry Arch Business Park , Dromore , Letterkenny ,	Report no.: 22-01227 No. of samples: 4 Acceptance date: 22/02/2022 Analysis date: 22/02/2022 Date of issue: 23/02/2022 Contact: Denis Faulkner
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Comments
4 x sample water

Sample ID	Sample type	Client reference	Test method	Test description	Result / Units
22-01227-(01)	Water	DM1 (SE)	E-128	Bergerhoff Dust	66.64 mg/m ³ /day
22-01227-(02)	Water	DM2 (SW)	E-128	Bergerhoff Dust	4.24 mg/m ³ /day
22-01227-(03)	Water	DM3 (NW)	E-128	Bergerhoff Dust	6.37 mg/m ³ /day
22-01227-(04)	Water	DM4 (NE)	E-128	Bergerhoff Dust	8.49 mg/m ³ /day

The results in this electronically produced test report have been checked and approved. The test report meets the requirements of IS EN ISO/IEC 17025:2017 and is also valid without signature.

Report authorised by:
Fiona Moloney
Technician

In Test Method - 'Subcontracted A' tests are accredited. 'Subcontracted U' tests are unaccredited.
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CERTIFICATE OF ANALYSIS

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Customer: Greentrack 4 Roe House, Dry Arch Business Park , Dromore , Letterkenny ,	Report no.: 22-01838 No. of samples: 4 Acceptance date: 22/03/2022 Analysis date: 22/03/2022 Date of issue: 23/03/2022 Contact: Denis Faulkner
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Comments
 4 x samples ex Tinneys Quarry

Sample ID	Sample type	Client reference	Test method	Test description	Result / Units
22-01838-(01)	Water	DM1(SE)	E-128	Bergerhoff Dust	52.21 mg/m ³ /day
22-01838-(02)	Water	DM2(SW)	E-128	Bergerhoff Dust	16.55 mg/m ³ /day
22-01838-(03)	Water	DM3(NW)	E-128	Bergerhoff Dust	9.34 mg/m ³ /day
22-01838-(04)	Water	DM4(NE)	E-128	Bergerhoff Dust	19.95 mg/m ³ /day

The results in this electronically produced test report have been checked and approved. The test report meets the requirements of IS EN ISO/IEC 17025:2017 and is also valid without signature.

Report authorised by: *J Cassidy*
Julie Cassidy
 Senior Technician

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Customer: Greentrack
 4 Roe House,
 Dry Arch Business Park ,
 Dromore ,
 Letterkenny ,

Report no.: 22-02623
No. of samples: 4
Acceptance date: 25/04/2022
Analysis date: 25/04/2022
Date of issue: 27/04/2022
Contact: Denis Faulkner

Comments
 4 x samples ex Tinney's Quarry

Sample ID	Sample type	Client reference	Test method	Test description	Result / Units
22-02623-(01)	Water	DM1(SE)	E-128	Bergerhoff Dust	84.9 mg/m ² /day
22-02623-(02)	Water	DM2(SW)	E-128	Bergerhoff Dust	63.2 mg/m ² /day
22-02623-(03)	Water	DM3(NW)	E-128	Bergerhoff Dust	1.70 mg/m ² /day
22-02623-(04)	Water	DM4(NE)	E-128	Bergerhoff Dust	20.8 mg/m ² /day

The results in this electronically produced test report have been checked and approved. The test report meets the requirements of IS EN ISO/IEC 17025:2017 and is also valid without signature.

Report authorised by: *J Cassidy*
Julie Cassidy
 Senior Technician

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Customer: Greentrack
 4 Roe House,
 Dry Arch Business Park ,
 Dromore ,
 Letterkenny ,

Report no.: 22-03271
No. of samples: 4
Acceptance date: 20/05/2022
Analysis date: 20/05/2022
Date of issue: 23/05/2022
Contact: Denis Faulkner

Comments
 4 x samples ex Tinneys Quarry

Sample ID	Sample type	Client reference	Test method	Test description	Result / Units
22-03271-(01)	Water	DM1-(SE)	E-128	Bergerhoff Dust	25.9 mg/m ³ /day
22-03271-(02)	Water	DM2-(SW)	E-128	Bergerhoff Dust	107 mg/m ³ /day
22-03271-(03)	Water	DM3-(NW)	E-128	Bergerhoff Dust	5.52 mg/m ³ /day
22-03271-(04)	Water	DM4-(NE)	E-128	Bergerhoff Dust	9.34 mg/m ³ /day

The results in this electronically produced test report have been checked and approved. The test report meets the requirements of IS EN ISO/IEC 17025:2017 and is also valid without signature.

Report authorised by:
Julie Cassidy
 Senior Technician

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Customer: Greentrack
 4 Roe House,
 Dry Arch Business Park ,
 Dromore ,
 Letterkenny ,

Report no.: 22-04027
No. of samples: 4
Acceptance date: 23/06/2022
Analysis date: 23/06/2022
Date of issue: 24/06/2022
Contact: Denis Faulkner

Comments
 4 x samples ex Tinneys Quarry

Sample ID	Sample type	Client reference	Test method	Test description	Result / Units
22-04027-(01)	Water	DM1-(SE)	E-128	Bergerhoff Dust	18.25 mg/m ³ /day
22-04027-(02)	Water	DM2-(SW)	E-128	Bergerhoff Dust	45.42 mg/m ³ /day
22-04027-(03)	Water	DM3-(NW)	E-128	Bergerhoff Dust	6.79 mg/m ³ /day
22-04027-(04)	Water	DM4-(NE)	E-128	Bergerhoff Dust	12.73 mg/m ³ /day

The results in this electronically produced test report have been checked and approved. The test report meets the requirements of IS EN ISO/IEC 17025:2017 and is also valid without signature.

Report authorised by:

Julie Cassidy
 Senior Technician

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