

**20/06/2016**

Michael Boland  
Executive Scientist  
Water and Environmental Services  
Wicklow Country Council  
County Buildings  
Wicklow Town  
Co. Wicklow

**RE : Section 55 Notice for Ballinclare Quarry and Measures required**

Dear Mr. Boland,

As required within the section 55 notice, on behalf of Kilsaran International, I am providing a description of the air monitoring to date and the planned air monitoring programme.

**I. Overview of air monitoring programme to date**

Long test and short test air sampling and vegetation sampling has been undertaken between 25<sup>th</sup> of May and 15<sup>th</sup> of June 2016 across the site and around the perimeter. These samples were chosen to be representative of the temporary waste containment area and receptors at the quarry perimeter.

*Figure 1 - Air Sampling Locations (May/June 2016)* provides the locations for all short test sampling undertaken by About Safety Limited. *Figure 1a - Air Sampling Locations (June 2016)* provides the locations for the long test sampling undertaken by AWN consulting as well as the vegetation sampling undertaken on the 2<sup>nd</sup> of June 2016.

Long test sampling was undertaken by AWN consultants between the 2<sup>nd</sup> and 6<sup>th</sup> of June 2016 with results analysed by IOM Laboratories in Edinburgh. Each sample was carried out over a 240-minute period using an SKC Universal Sampling Pump at 2 L/min onto a gridded membrane filter, providing a total volume of air sampled of 480 L. Short test sampling was undertaken by About Safety Limited using varying flow rates and pump durations in accordance with Safety Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 and the associated EU directives. The analytical method applied to all results is based on Asbestos International Association, Recommended Technical Method No. 2 (RTM2, AIA 1984) and International Standards Organisation (2002), International Standard 14966.

**Cork Office**  
Unit 5, ATS Building,  
Carrigaline Industrial Estate,  
Carrigaline, Co. Cork.  
T: + 353 21 438 7400  
F: + 353 21 483 4606

AWN Consulting Limited  
Registered in Ireland No. 319812  
Directors: F Callaghan, C Dilworth,  
T Donnelly, T Hayes, D Kelly, E Porter

Table 1 provides a comprehensive overview of the sampling results and includes an assessment of the fibre concentrations in relation to the HSA Binding Occupational Exposure Limit. All samples were in compliance with the HSA COP 2011 value of 0.1f/ml. Representative vegetation sampling was also undertaken by AWN and analysed by ChemTest showing no asbestos to be present.

## II. Proposed air monitoring programme

As required by the Section 55, weekly dust and asbestos sampling will be undertaken and a report submitted to WCC. It should also be noted that Kilsaran has ensured that reassurance monitoring is being undertaken for all works being undertaken within the unloading area or blast area. This ensures that adequate mitigation is in place to minimise release of fibres within the quarry during works.

Please find below a description of the monitoring methodology at the quarry for dust and asbestos over coming weeks.

### Methodology

#### *Dust*

It is proposed to monitor for PM<sub>10</sub> at one location (SD1) using a R&P Partisol®-Plus Sequential Air Sampler (Model 2025). The sampler is a manual air sampling platform which has been designed to meet US EPA Reference Designation (RFPS-1298-127). Approximately 24 m<sup>3</sup> of air will be sampled daily through a particle size separator, which is contained within the PM<sub>10</sub> sampling head. The impactor removes particles with a diameter >10 µg and the remaining particles are collected on pre-weighed 47mm diameter filters. The Partisol® sampler is programmed to automatically replace each sampled filter by a new pre-weighed filter at midnight. This ensures that each filter represents a sampling period of exactly 24 hours. Gravimetric determination carried out pre- and post-sampling by a UKAS accredited laboratory using a calibrated scientific balance.

#### *Asbestos*

Monitoring of asbestos will be carried out at six different locations (SA1 – SA6) around the quarry (see *Figure 1 – Monitoring locations*). The methodology for the monitoring of asbestos will follow *The Health and Safety Executive (HSE) Guidance Asbestos: The Analysts Guide for Sampling, Analysis and Clearance Procedures*, which recommend that sampling and analysis of materials for the presence of asbestos is undertaken to comply with CAWR 2002 ACOPs L27 and L28 when sampling airborne fibres.

The HSE procedure recommends using a known flow rate (1-16 L/min) through a filter for a set period of time until 480 litres of air have been sampled. To achieve the quantification limit (0.01 f/ml), each measurement must result from a total of at least 480 litres in volume. The fibres can then be counted by the accredited IOM laboratory: The calculated total number of fibres collected on the filter is divided by the volume of air sampled to determine the fibre concentration in terms of fibre per millilitre of air (f/ml).

### Frequency of Monitoring and Results

Dust monitoring will occur continuously from 00:00 on Friday 17th June. Samples will be collected weekly. The first set of samples will be collected on Friday 24th June with results expected approximately 5 working days later. Results expected to be received Friday 1st July for the first week of samples.

In relation to asbestos sampling, these samples will be taken on a weekly basis. The first samples will be taken on 17<sup>th</sup> June with results expected on the 24<sup>th</sup> or 27<sup>th</sup> June.

Yours sincerely,



**Teri Hayes**  
Director AWN Consulting

cc. *Michael Geaney, A/Director of Services, Water and Environmental Services, Wicklow Co. Council*

encl. *Table 1 – Air Quality Monitoring Programme Results, Balliclare Quarry – May/June 2016*  
*Figure 1 – Air Sampling Locations (May/June 2016)*  
*Figure 1a – Air Sampling Locations (June 2016)*  
*Figure 1 - Monitoring Locations*

**Table 1: Air Quality Monitoring Programme Results, Balliclare Quarry – May/June 2016**

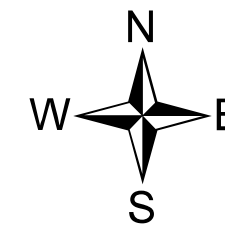
Date	Consultant	Location Description	Total Fibre Concentration (f/ml)	Total Asbestos Fibre Concentration (f/ml)	Indicative results	Analysed by:	HSA Limit Value	Compliance With HSA Binding Occupational Exposure Limit	Notes
02/06/2016	SMcM	Opposite Ballinclare house	0.002	0.002	Small number of amphibole asbestos fibres detected	IOM	0.1 f/ml	Yes	
02/06/2016	SMcM	330m SE of site entrance on road	<0.002	<0.002	Small number of amphibole asbestos fibres detected	IOM	0.1 f/ml	Yes	
02/06/2016	SMcM	500 m NE of site entrance, receptor house	0.002	0.002	Small number of amphibole asbestos fibres detected	IOM	0.1 f/ml	Yes	
02/06/2016	SMcM	NW of site boundary on road	<0.002	<0.002	Small number of amphibole asbestos fibres detected	IOM	0.1 f/ml	Yes	
03/06/2016	AC	Quarry Entrance	ND <0.002	ND <0.002	No asbestos fibres were detected	IOM	0.1 f/ml	Yes	
03/06/2016	AC	Coakley House, Back Wall of House	ND <0.002	ND <0.002	No asbestos fibres were detected	IOM	0.1 f/ml	Yes	
03/06/2016	AC	Gate to Wicklow CoCo Depot	ND <0.002	ND <0.002	No asbestos fibres were detected	IOM	0.1 f/ml	Yes	
04/06/2016	SMcM	Quarry Gate	<0.002	<0.002	Small number of amphibole asbestos fibres detected	IOM	0.1 f/ml	Yes	
04/06/2016	SMcM	Opposite Ballinclare House Entrance	0.005	<0.002	Small number of amphibole asbestos fibres detected	IOM	0.1 f/ml	Yes	
06/06/2016	AC	Quarry Entrance	ND <0.003	ND <0.003	No asbestos fibres were detected	IOM	0.1 f/ml	Yes	
06/06/2016	AC	Gate to Wicklow CoCo Depot	ND <0.002	ND <0.002	No asbestos fibres were detected	IOM	0.1 f/ml	Yes	

02/06/2016	SMcM	Opposite Ballinclare house	N/A	N/A	No asbestos fibres were detected	ChemTest	0.1 f/ml	Yes	*Vegetation sample
02/06/2016	SMcM	Opposite Ballinclare house	N/A	N/A	No asbestos fibres were detected	ChemTest	0.1 f/ml	Yes	*Vegetation sample
02/06/2016	SMcM	330m SE of site entrance on road	N/A	N/A	No asbestos fibres were detected	ChemTest	0.1 f/ml	Yes	*Vegetation sample
02/06/2016	SMcM	Grass Sample across road from quarry entrance and leaf sample at quarry entrance	N/A	N/A	No asbestos fibres were detected	ChemTest	0.1 f/ml	Yes	*Vegetation sample
02/06/2016	SMcM	Grass Sample across road from quarry entrance and leaf sample at quarry entrance	N/A	N/A	No asbestos fibres were detected	ChemTest	0.1 f/ml	Yes	*Vegetation sample
02/06/2016	SMcM	approx. 100m west of quarry entrance	N/A	N/A	No asbestos fibres were detected	ChemTest	0.1 f/ml	Yes	*Vegetation sample
02/06/2016	SMcM	approx. 100m west of quarry entrance	N/A	N/A	No asbestos fibres were detected	ChemTest	0.1 f/ml	Yes	*Vegetation sample
02/06/2016	SMcM	NW of site boundary on road	N/A	N/A	No asbestos fibres were detected	ChemTest	0.1 f/ml	Yes	*Vegetation sample
02/06/2016	SMcM	NW of site boundary on road	N/A	N/A	No asbestos fibres were detected	ChemTest	0.1 f/ml	Yes	*Vegetation sample
25/05/2016		Weigh bridge area	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
25/05/2016		North perimeter boundary	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
25/05/2016		Outside crushing area	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	

25/05/2016		Centre of Quarry	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
26/05/2016		Conveyor from crusher	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
26/05/2016		Inside crusher shed	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
26/05/2016		Mobile crusher in quarry	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
26/05/2016		Road NE corner of quarry	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
31/05/2016		Area 1	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
31/05/2016		Area 2	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
31/05/2016		Area 3	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
31/05/2016		Area 4	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
31/05/2016		Area 5	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
31/05/2016		Area 6	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
31/05/2016		Area 7	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
01/06/2016		Weigh bridge office	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	

01/06/2016		Over blast area	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
01/06/2016		Over blast area	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
01/06/2016		Receptor at control room	0.06	Not measured	High loadings of silica dusts with asbestiform fibres evident	About Safety Limited	0.1 f/ml	Yes	
01/06/2016		Blast area at mobile crusher	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
01/06/2016		Behind old office building	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
01/06/2016		NW corner of site	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
02/06/2016		Entrance gate	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
02/06/2016		Boundary right of gate	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
02/06/2016		Boundary right of gate	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
02/06/2016		Boundary right of gate	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
02/06/2016		Boundary left of gate	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
02/06/2016		Boundary left of gate	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
02/06/2016		Site Office	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	

02/06/2016		WC	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
02/06/2016		Centre of yard	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
02/06/2016		Under asphalt	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
02/06/2016		Boundary at container	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
15/06/2016		Water Bowser	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
15/06/2016		see map	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
15/06/2016		see map	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
15/06/2016		see map	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
15/06/2016		see map	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	
15/06/2016		Site office at weigh bridge	<0.01	Not measured		About Safety Limited	0.1 f/ml	Yes	



# Legend

## Sampling locations/ Type:

Air sampling - Short test

- E25 - Sampled/ Tested on 25/05/2016
- B26 - Sampled/ Tested on 26/05/2016
- - Sampled/ Tested on 31/05/2016
- AREA1**
- R01 - Sampled/ Tested on 01/06/2016
- F02 - Sampled/ Tested on 02/06/2016
- A15 - Sampled/ Tested on 15/06/2016

Refer Figure 1a for:  
 Air sampling  
 02/06/2016  
 03/06/2016  
 04/06/2016  
 06/06/2016

*Note: Refer to Report Table for additional detail on all samples indicated on Figure 1 and Figure 1a*

Do not scale; Indicative Only (NTS)  
 0 50 100 Metres

AWN licence no. EN 0007513  
*Note: Drawing is for illustrative purposes only*  
 Source: Kilsaran, flown 28/05/2016

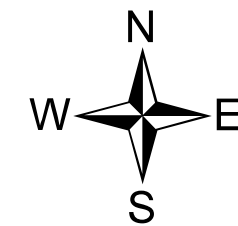
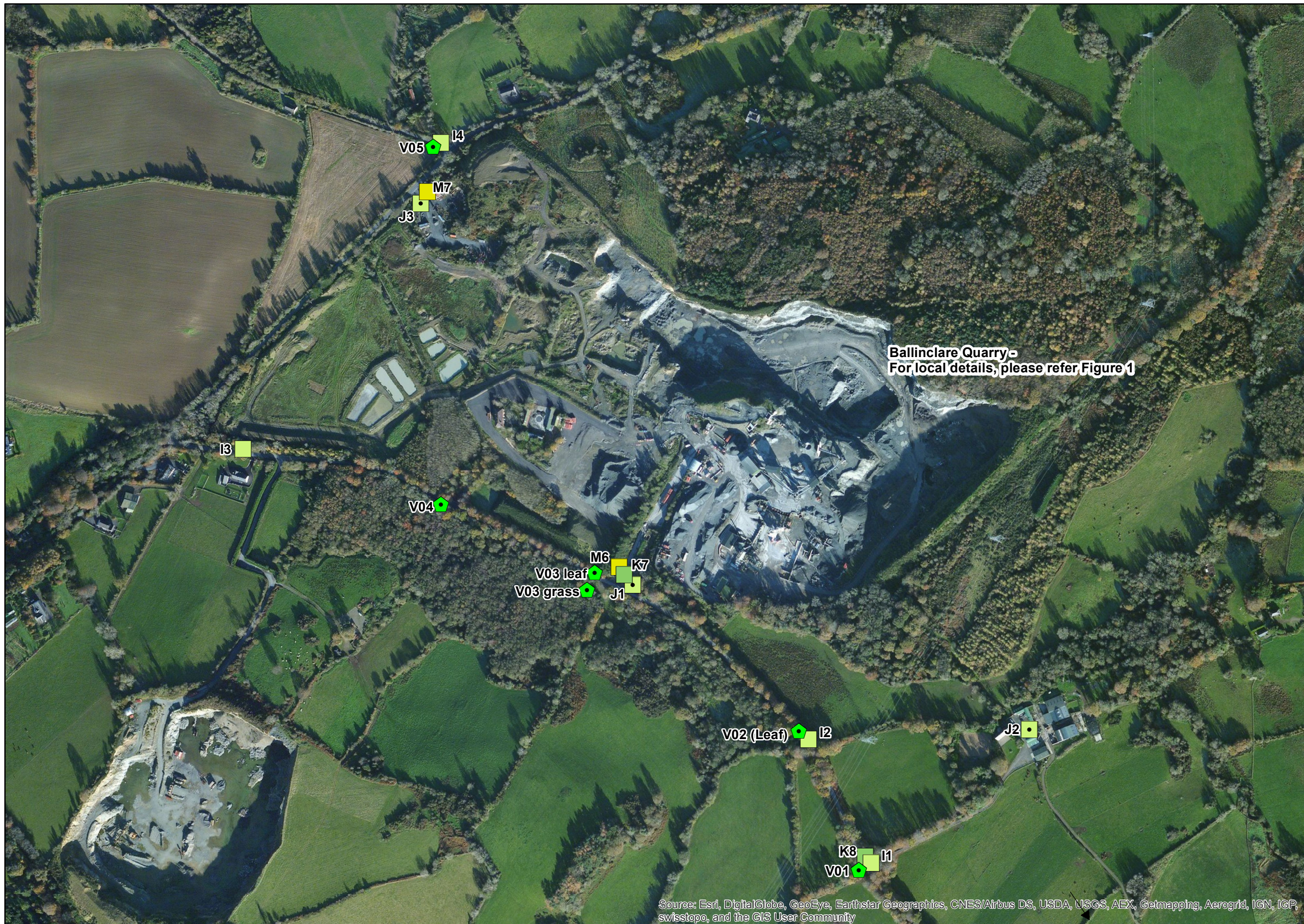


Copyright AWN CONSULTING LIMITED  
 All rights reserved. No part of this work may be modified or reproduced or copied in any form or by means - graphic, electronic or mechanical, including photocopying, recording, taping or information retrieval system, or used for any purpose other than its designated purpose, without the written permission of AWN Consulting Limited



**AWN Consulting Ltd**  
 The Tecpro Building,  
 Clonsaugh Business & Technology Park  
 Dublin 17,  
 Tel: + 353 1 847 4220  
 Fax: + 353 1 847 4257

CLIENT: <b>Kilsaran Ballinclare, Co. Wicklow</b>	PROJECT: <b>Air Monitoring Programme</b>	DRAWN: P.G.	CHECKED: T.H.	APPROVED: T.H.	DATE: 16/06/2016
DRAWING TITLE: <b>Air Sampling Locations (May/June 2016)</b>	Project Ref: TH/16/9020SR01	<b>Figure 1</b>		1	A3
REVISION DESCRIPTION Drawing 16-06-2016			SHEET 1	REV 0	



## Legend

### Sampling locations/ Type:

#### Air sampling - Long test

- I1 ■ - Sampled on 02/06/2016
- J1 ● - Sampled on 03/06/2016
- K7 ■ - Sampled on 04/06/2016
- M6 ■ - Sampled on 06/06/2016

#### Vegetation sampling

- V01 ◆ - Sampled on 02/06/2016  
(Grass and Leaf unless indicated)

Note: Refer to Report Table for additional detail on all samples indicated on Figure 1a and Figure 1



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

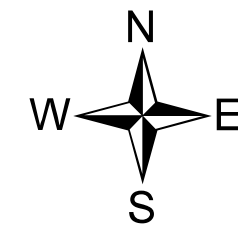
AWN licence no. EN 0007513  
Note: Drawing is for illustrative purposes only  
Source: ESRI Maps

Copyright AWN CONSULTING LIMITED  
All rights reserved. No part of this work may be modified or reproduced or copied in any form or by means - graphic, electronic or mechanical, including photocopying, recording, taping or information retrieval system, or used for any purpose other than its designated purpose, without the written permission of AWN Consulting Limited



**AWN Consulting Ltd**  
The Tecpro Building,  
Clonsaugh Business & Technology Park  
Dublin 17,  
Tel: + 353 1 847 4220  
Fax: + 353 1 847 4257

<b>CLIENT:</b> Kilsaran Ballinclare, Co. Wicklow	<b>PROJECT:</b> Air Monitoring Programme	<b>DRAWN:</b> P.G.	<b>CHECKED:</b> T.H.	<b>APPROVED:</b> T.H.	<b>DATE:</b> 16/06/2016
<b>DRAWING TITLE:</b> Air Sampling Locations (June 2016)	Project Ref: TH/16/9020SR01	<b>Figure 1a</b>		1	A3
REVISION DESCRIPTION Drawing 16-06-2016				SHEET 1	REV 0



# Legend

Sampling locations/ Type:

- SA1 - SA6  
- Asbestos Sampling Point
- SD1  
- Dust Sampling Point



Do not scale; Indicative Only (NTS)  
 0 50 100 Metres

AWN licence no. EN 0007513  
 Note: Drawing is for illustrative purposes only  
 Source: Kilsaran, flown 28/05/2016

Copyright AWN CONSULTING LIMITED  
 All rights reserved. No part of this work  
 may be modified or reproduced or copied  
 in any form or by means - graphic, electronic  
 or mechanical, including photocopying,  
 recording, taping or information retrieval  
 system, or used for any purpose other than  
 its designated purpose, without the written  
 permission of AWN Consulting Limited



**AWN Consulting Ltd**  
 The Tecpro Building,  
 Clonsaugh Business & Technology Park  
 Dublin 17,  
 Tel: + 353 1 847 4220  
 Fax: + 353 1 847 4257

<b>CLIENT:</b> Kilsaran Ballinclare, Co. Wicklow	<b>PROJECT:</b> Proposed Section 55 Air Monitoring	<b>DRAWN:</b> P.G.	<b>CHECKED:</b> T.H.	<b>APPROVED:</b> T.H.	<b>DATE:</b> 14/06/2016
<b>DRAWING TITLE:</b> Monitoring Locations	Project Ref: TH/16/9020SR01	<b>Figure 1</b>		1	A3
REVISION DESCRIPTION Drawing 14-06-2016			SHEET 1	REV 0	NTS