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Newport City Council
Civic Amenity Site – Asbestos Cell

Airborne Fibre Monitoring

December 2017

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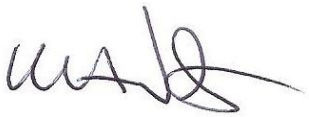
Author: 

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Airborne Fibre Monitoring

1. Introduction

1.1 At the request of Mr Jonathan Davey of Newport City Council, airborne fibre monitoring has been carried out at the Civic Amenity Site, Docksway, Newport.

1.2 The monitoring was carried out by Mr Kelvin Williams, Chartered Occupational Hygienist, and included site visits on 5th and 6th December 2017.

2. Background

2.1 Newport City Council have established an "asbestos cell" at the Civic Amenity Site. Prior to establishment of the cell and commencement of operations, Newport City Council collected data on background airborne asbestos fibre concentrations for future reference.

2.2 Since the asbestos cell has been in operation for over a year, Newport City Council require data to assess whether there has been a significant change in levels of airborne asbestos fibre concentrations in the area.

2.3 During the initial monitoring exercise, and further to discussion with Newport City Council, it was agreed that airborne fibre monitoring would be carried out from two points at the boundary of the site near the asbestos cell area and at one point inside the asbestos cell area. These monitoring locations have been repeated with the sample from the asbestos cell area being collected at the vehicle access point to the asbestos cell (see Photograph 1 – Appendix 2).

3. Methodology

Sampling

3.1 Air samples were collected from the locations illustrated on the site plan given in Appendix 1. Photographic illustrations of the sampling locations at the asbestos cell access point, the south boundary and the west boundary are provided in Appendix 2.

3.2 In brief, air was drawn at a known rate, and for a known period of time through polycarbonate membrane filters.

Analysis

3.3 A portion of each filter is excised and mounted on a 13mm aluminium stub, coated with gold, and examined by SEM. Each filter is searched systematically at 2000X magnification until an area of 1mm^2 has been examined or 50 whole fibres found. All respirable fibres (aspect ratio >3:1, length >57m and diameter <37m and including fibres in contact with particles >37m diameter) detected are analysed by EDXS and identified as

closely as possible, by comparing morphology and composition with standard reference materials. The method used for analysis is documented in IOM instruction manual No.1 and is based on Asbestos International Association, Recommended Technical Method No. 2 (RTM2, AIA 1984) and International Standards Organisation (2002), International Standard 14966.

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3.4 The method used for analysis is based on Asbestos International Association, Recommended Technical Method No. 2 (RTM2, AIA 1984) and International Standards Organisation (2002), International Standard 14966.

Methodology References

Asbestos International Association. (1984). Method for the determination of airborne asbestos fibres and other inorganic fibres by Scanning Electron Microscopy. Recommended Technical Method No. 2 (RTM2)

AIA, London. International Standards Organisation (2002). International Standard 14966. Ambient Air: Determination of numerical concentration of inorganic fibrous particles-Scanning electron microscopy method.

General

3.5 Observations were made on weather conditions and activity prevailing at the time of sampling.

4. Results

4.1 The sampling schedule, together with description of weather conditions, is given in Table 1 below.

Table 1 – Sampling schedule

Date	Sample	Location	Weather / Comments
5/12/17	1/78/17	At access point to asbestos cell	Mostly dry, occasional light shower Wind: south westerly 6 mph Temperature 8ºC No activity in Scott Palletts Vehicles active across landill site and one skip of asbestos deposited in asbestos cell
	2/78/17	South: boundary to Scott Palletts	
	3/78/17	West: access road beside lagoon	
6/12/17	4/78/17	At access point to asbestos cell	Dry Wind: south westerly 14 mph Temperature 11ºC No activity in Scott Palletts Vehicles active across landill site and asbestos cell
	5/78/17	South: boundary to Scott Palletts	
	6/78/17	West: access road beside lagoon	

4.2 The airborne fibre monitoring results are described in Table 2 below.

Table 2 – Airborne Fibre Monitoring Results

Sample No.	Volume (l)	(1) No. of Resp. Fibres Found	(1) No. of Fields Searched	Total Fibre Conc^{n} (fml^{-1})	AMX Fibre Conc^{n} (fml^{-1})	CMX Fibre Conc^{n} (fml^{-1})	MMMF Conc^{n} (fml^{-1})	NAM Fibre Conc^{n} (fml^{-1})
1/78/17	972	0	300	ND<0.0006*	ND<0.0006*	ND<0.0006*	ND<0.0006*	ND<0.0006*
2/78/17	924	0.5	300	0.0007*	ND<0.0007*	ND<0.0007*	ND<0.0007*	<0.0007*
3/78/17	972	0	300	ND<0.0006*	ND<0.0006*	ND<0.0006*	ND<0.0006*	ND<0.0006*
4/78/17	996	0	300	ND<0.0006*	ND<0.0006*	ND<0.0006*	ND<0.0006*	ND<0.0006*
5/78/17	999	0	300	ND<0.0006*	ND<0.0006*	ND<0.0006*	ND<0.0006*	ND<0.0006*
6/78/17	996	0	300	ND<0.0006*	ND<0.0006*	ND<0.0006*	ND<0.0006*	ND<0.0006*

AMX-Amphibole Asbestos **CMX** – Chrysotile Asbestos **MMMF** – Machine Made Mineral Fibre **NAM**-Non Asbestos Mineral **ND** – None Detected

When no fibres of a given type are detected, the fibre concentration can be reported as less than the concentration equivalent to three fibres (the one sided upper 95% confidence limit of the Poisson distribution). Therefore, when 0, 1 or 2 fibres are detected, 2.99 is used in the calculation of fibre concentrations. It expresses the 95% confidence detection limit for airborne fibre concentrations. When a volume of 999 litres is used the 95% confidence limit is 0.0006 fml^{-1} for the number of fields searched.

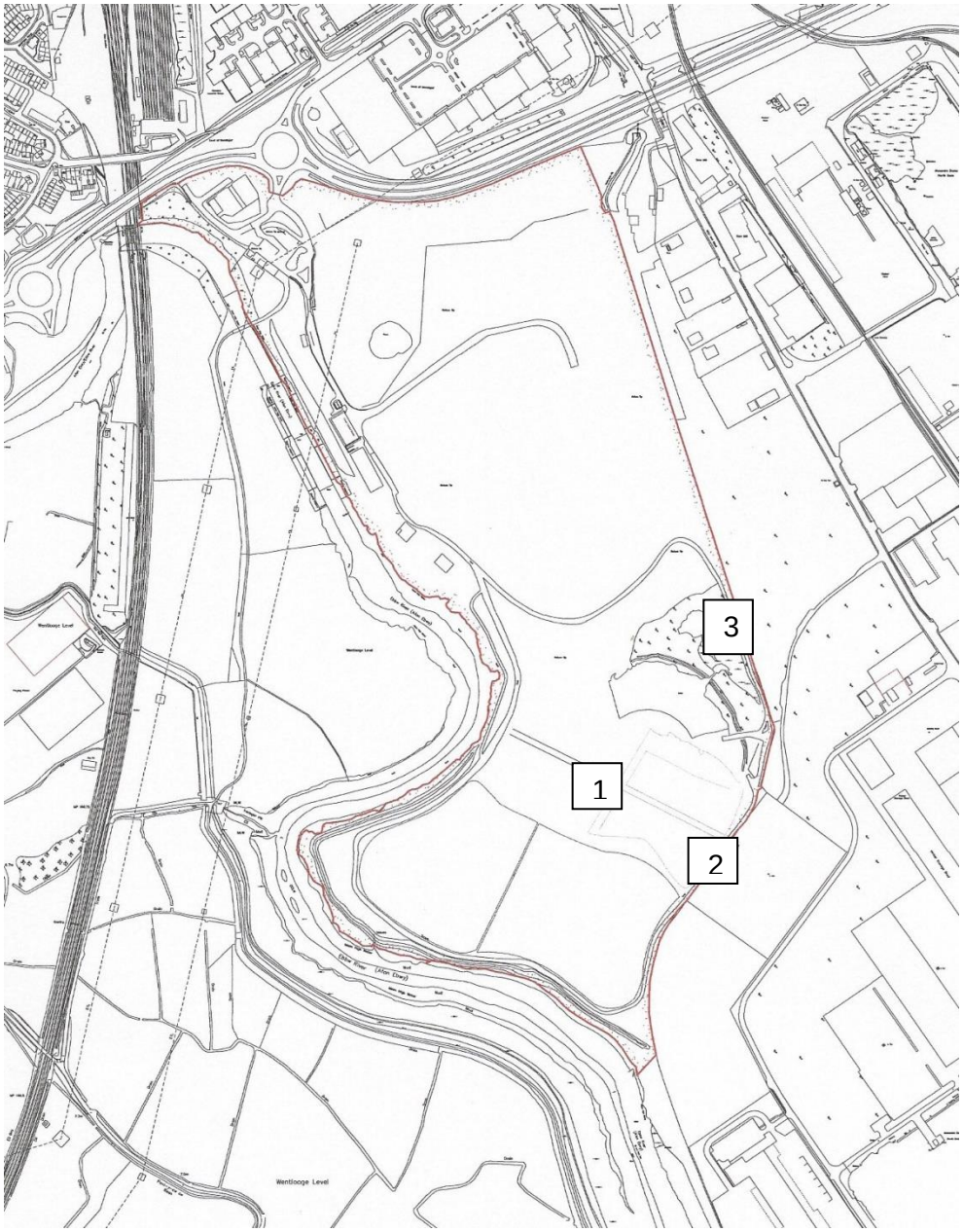
5. Discussion

5.1 No asbestos fibres were detected during the analysis of any of these samples.

5.2 UKAS accreditation for this work is limited to results obtained directly from the analysis.

Appendix 1 - Site Plan Illustrating Sampling Locations

Civic Amenity Site: Docksway



Key to sample locations

1. At access point to asbestos cell
2. South: boundary to Scott Palletts
3. West: access road beside lagoon

Appendix 2 – Photographic Illustrations

Photograph 1 – Sampling location on asbestos cell (access point to cell)

Photograph 2 – Sampling location: south boundary to Scott Palletts

Photograph 3 – Sampling location, access road beside lagoon