

Hardworthy House,  
Hardworthy,  
Bradworthy,  
Holsworthy,  
Devon EX22 7SD

Mr W.Callaghan,  
The Chairman,  
Health and Safety Commission,  
Rose Court,  
Southwark Bridge,  
London SE1 9HS

20<sup>th</sup> October 2005

Dear Mr Callaghan,

**Campaign to improve the asbestos management in schools**

You are aware that there is a serious problem of asbestos in schools, and that the HSE acknowledges that a significant minority of LEA's and school authorities have inadequate asbestos management systems. A year ago the HSE and the DfES initiated a campaign to improve the asbestos management in schools, and I understood from you and your officers that this was to be a priority. I was asked by the HSE to be part of this campaign, however a year later the first meeting has not even taken place.

Please can you ensure that this campaign is reinstated and given the priority that it so desperately needs.

**Drawing pin tests**

Teachers and children have been exposed to asbestos in the past, and regrettably with the gradual deterioration of the asbestos in our schools, and the lack of adequate asbestos management systems, they will continue to be exposed. Part of that exposure is from the practice of many teachers, and in particular primary school teachers, of inserting drawing pins into the walls and ceilings to display the children's work. When those walls and ceilings are AIB then amosite fibres have been released and the teachers and children have been exposed.

Four years have passed in which the HSE/HSL, and an independent firm Howie Associates, have both carried out two series of tests. Although many of the results give similar levels of fibre release there is a huge gulf between the interpretation and conclusions that have been drawn from those results. Mr Howie and I have asked for a meeting so that the issue can be resolved, however the HSE and HSL continue to refuse our requests. Please can I ask that use your influence to facilitate a meeting between all the interested parties so that this matter can be rapidly resolved.

I enclose a letter from Mr Howie which gives a scale of the problem.

**Criticism of the HSE and HSL**

I also enclose a letter that I have written to Mr Burdett of the HSL in relation to the drawing pin tests. As it contains serious criticism of both the HSE and the HSL I have copied it to you.

Yours Sincerely



Michael Lees

Attached:

Letter Lees/ Burdett 18<sup>th</sup> October 2005

Letter Howie Associates/Burdett 14<sup>th</sup> October 2005

*Robin Howie Associates*

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*12, Morningside Road,  
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14<sup>th</sup> October 2005*

**Our Ref: RMH/03/324**

**Mr. Garry Burdett,  
Inorganics and Fibres Section,  
Health and Safety Laboratories,  
Harpur Hill,  
Buxton,  
SK17 9JN**

Dear Mr. Burdett

**HSL Report No. IF2005/06**

**Summary**

- 1) HSL report IF2005/06 suggests that a teacher may be exposed to about 0.05 fibres/ml of airborne amosite from the insertion and removal of drawing pins into/from AIB: about 15,000 times higher than estimated by Mark Piney in his report of 20<sup>th</sup> August 2004.
- 2) IF2005/06 suggests that a teacher's cumulative exposure to amosite fibres will be about 3,000 times higher than estimated by Mark Piney.
- 3) Mark Piney's estimates and conclusions of August 2004 were reported by HSE to DfES and the NUT in letters of 23<sup>rd</sup> August 2004.
- 4) The results in IF2005/06 therefore requires that HSE withdraw their above letters to both DfES and the NUT and reissue information based on the most recent experimental data.
- 5) I consider that the methodology adopted in the tests reported in IF2005/06 is likely to have underestimated airborne fibre concentrations in both teachers' breathing zones and in the general classroom air.
- 6) I consider that the IF2005/06 report should be reassessed at a meeting of all interested parties, including a mutually agreed external expert, to achieve a mutually acceptable interpretation of all the available experimental data.

I thank you for your letter of 22<sup>nd</sup> September regarding my comments of 9<sup>th</sup> August 2005 on the above report.

I must first apologise for an error in my letter of 9<sup>th</sup> August in that the reference given for the text referring to paragraph 138 of HSE (2002) should have been "HSE (2001)"

I appreciate that you do not wish to accept the relationship between contaminant release, the effective volume into which the contaminant is released and the likely airborne concentration. However, you should appreciate that such relationship is the basis of Mark Piney's estimates and conclusions in his report of 20<sup>th</sup> August 2004, the use of weight/volume and dustiness/volatility of substances in the "risk assessment" component of COSHH Essentials and Equation 1 of the Appendix of EH 41:1988 "Ventilation of the workplace"

If, for the sake of argument, we accept your figure of about 0.05 fibres/ml being generated from the insertion and removal of 100 drawing pins into/from widely spaced holes in AIB as being the critical metric of exposure, and compare it with Mark Piney's conclusion that the insertion and removal of 20 widely spaced drawing pins would generate 0.00000316 fibres/ml in a classroom of about 190 m<sup>3</sup>, we must accept that your preferred concentration is a factor of  $0.05/0.00000316 = 15,800$  times higher than Mark's calculated concentration.

Your interpretation of your results leads to an assumed airborne amosite fibre concentration about 15,000 times higher than that estimated by Mark Piney in his report of 20<sup>th</sup> August 2004.

If it is further assumed that the emission from 20 holes generates the same instantaneous concentration as from 100 holes, but that the period for which the 0.05 fibres/ml concentration is maintained is reduced pro rata with the number of holes, the cumulative exposure would be reduced by about a factor of about five, i.e. your figure of 0.05 fibres/ml over the period of emission would increase the cumulative exposure to airborne amosite fibres by about a factor of 3,000 as compared with Mark's assessment.

Did you challenge Mark's calculated airborne classroom concentration of 0.00000316 fibres/ml for 20 widely spaced holes?

You will note that the classroom concentrations calculated by myself are lower than your figure of 0.05 fibres/ml.

Whether your figure of 0.05 fibres/ml or the lower classroom estimates noted in my letter of 9<sup>th</sup> August are accepted, it will be necessary for HSL to provide the relevant information to HSE, for HSE to withdraw the information provided by it to DfES and the National Union of Teachers in their letters of 23<sup>rd</sup> August 2004 and to provide the more recent information from IF2005/06.

There are a number of other comments in your letter to which I must respond

1) Your refusal to accept the relationship between fibre emission and airborne fibre concentration means that you have failed to recognise that the vacuuming tests, preferably using the cyclone sampler, give a good estimate of total emissions as noted for the pin insertion and removal sections in both of the tests reported in IF2005/06.

2) You comment that as all three sets of samplers gave similar results, it was unlikely that the RPE exhaust had affected the samplers. I must state that this is a post event assessment rather than a satisfactory scientific assessment. If the facepiece worn by Graham had a central exhaust valve, e.g. as in the "ProFlo" mask, all samplers could have been similarly affected.

I consider it essential that you assess objectively whether the RPE exhaust could have affected the samplers.

3) You comment that when inserting/removing drawing pins the subject's breathing zone would be about 30 cm below the ceiling and that the samplers were a "only a few additional cm below the breathing zone" Assuming that the subject was looking up at the ceiling as pins were inserted or removed and that the samplers were mounted on the lapels, the sampler inlets would be 20-30 cm below the subject's breathing zone, ie. about twice as far away from the source of emission as the subject's breathing zone. In Section 2.3.1 of Report MF22004/02 Graham comments that: "The further the cowl was from the hole (AIB surface) the lower was the airborne concentration" As the samplers were about twice as far from the fibre source as the subject's breathing zone, it can therefore be assumed that the concentrations at the unprotected breathing zone would be higher than at the sampler inlets.

I am surprised that the sampler inlets were not located as close as possible to the position of the subject's mouth: the samplers could easily have been cantilevered off a safety helmet head harness. Such location would have measured the airborne fibre concentration at the exact position of concern, i.e. at the subject's breathing zone, and would have avoided any effect from the respirator exhaust.

4) You comment that the correspondence did not refer to exposures other than to teachers.

I had assumed that you had received a copy of my letter of 31<sup>st</sup> August 2004 to Bill MacDonald in which I explicitly outlined the risk to teachers, children and school cleaners and janitorial staff and implicitly identified the risk to anyone in the home who handled contaminated artwork taken home. I append a copy of this letter. My information is that classroom "decoration" is generally carried out when the children are in the classroom: some of the children being involved as helpers. The detailed description of possible/probable exposure mechanisms given in my letter to Bill MacDonald therefore assumed that the children were in the classroom during the activity of concern.

I have other points of concern, eg. the failure to consider the deposition of debris on the subject's hair, face or clothing, but I consider the ones discussed above to be the most critical.

From the above, and other points raised in my letter of 9<sup>th</sup> August 2005, I consider that the methodology adopted in the tests reported in IF2005/06 is likely to have

caused underestimation of likely airborne fibre concentrations in both teachers' breathing zones and in the general classroom situation.

I therefore consider that the results should be reassessed at a meeting of all interested parties to achieve a mutually acceptable interpretation. I also suggest that a mutually agreed external expert be invited to such meeting. To ensure "neutrality", I suggest that any such expert should not be in receipt, directly or indirectly, of funding from HSL or HSE.

I therefore again reiterate my offer to participate in a round table meeting at any suitable venue.

Yours sincerely

Robin Howie

**Appended: Copy of my letter of 31<sup>st</sup> August 2004 to Bill MacDonald**

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Mr G. Burdett,  
Principle Scientist,  
Inorganics and Fibres Section,  
HSL  
Harspur Hill,  
Buxton,  
Derbyshire SK17 9JN

18th October 2005

Drawing pins in AIB

Dear Mr Burdett,

Thank-you for your letter of 22nd September

You state that I rejected your report and measurements out of hand. I can assure you that I rejected your basic assumptions, methodology and conclusions only after careful consideration of the facts. Therefore do not presume that I use my words lightly, for I do not.

I intentionally did not give a detailed response to the HSE/HSL series of tests because Mr Howie did so clearly and competently. His replies give comprehensive scientific and practical reasons why both of the HSE/HSL drawing pin tests are flawed to the extent that they give a dangerously misleading impression of the level of asbestos fibres released into the classroom.

You question the competence of the advice that I am being given. It was through the HSE that I was put in touch with Mr Howie because of his unrivalled expertise and abilities to design and to carry out such tests. He was also recommended to me by other professionals as he is a man who would design the tests and then draw his conclusions without being influenced by organisations with a vested interest in the results. I suggest that you pay heed to his arguments and rather than passing derogatory and dismissive remarks about his calculations, you carefully examine their significance.

You imply that Mr Howie has told me that the HSL method for measuring airborne fibres is incorrect. You are wrong for the opposite is true. Indeed if you care to read his paper you will see that there is no criticism of the HSL's technical abilities. Mr Howie has, in fact, used your own results to demonstrate that a large number of fibres are released with each and every drawing pin.

One reason I state that the HSE/HSL tests are flawed is because the series of tests have been designed, and the parameters set in a way that guarantees an unrealistically low measure of the level of fibres within the classroom.

A further reason is that the HSL report on the first series of tests included serious reservations about the reliability of the results. In spite of this the HSE made no mention of those reservations when they gave unambiguous statements to the DfES, the Minister of State for Schools and the General Secretary of the NUT. It would appear that the HSL have made no attempt to correct this error and have added to the false impression with your second report.

Your second test report states that “the results support the first test.” Which is manifestly wrong when the results are many thousands of times greater. It would appear that your report is intentionally written so that this huge discrepancy between the HSL tests is not immediately apparent. It would therefore appear that the HSL is intentionally attempting to mislead.

As has been seen the results of the first HSL test are fundamentally flawed. You state that this second series of tests were designed to simulate classroom conditions and to measure the airborne fibre count while pushing drawing pins into AIB, and during subsequent “work activity.” However before the “work activity” began the AIB fell to the floor. This led to unreliable readings which you discounted. Then, instead of following accepted scientific practice and repeating the test with the same parameters, you chose to increase the airflow by 22 times. I would strongly suggest that this cannot be considered as an honest and fair representation of classroom conditions when all the air is changed every four and a half minutes. It can only be concluded that such a preposterous airflow was designed specifically to give fibre counts that were as low as possible. Which it did.

Despite this manipulation of the test parameters your results give airborne concentrations many thousands of times greater than the first test. You have therefore proved that the results and conclusions of the first HSL test are wrong and cannot stand. It is therefore imperative that the DfES, the Schools Minister and the General Secretary of the NUT are informed that this is the case.

The evidence is that the HSE have dangerously underplayed the problem of asbestos in schools and have consequently given completely the wrong message to school authorities. It is indefensible that the asbestos guidance to schools is decades out of date, and that the HSE are attempting to exit from the campaign for improving asbestos management in schools. The fact that both the HSE and the HSL say that the risk from inserting drawing pins into AIB is almost negligible, seriously compounds the problem. Just last month a DfES visit to a well regulated school discovered that drawing pins were still being inserted into the AIB ceiling to display the children’s work. This proves that teachers and school authorities believe your statements, and consequently they remain in complete ignorance of the real dangers. I wish that you were correct that the risk is negligible, however I know that you are wrong. And so do you.

Mr Howie and I requested a meeting so that all the interested parties could consider the initial test results. We also requested that if any further tests were to be carried out then they would be performed with a mutually agreed methodology. You carried out your second test and ignored our request. No meeting has taken place and in your letter you again dismiss this request. You also state that there would have to be a persuasive argument that further experimental work would give any significantly different results.

This is a vitally important matter with far reaching implications that should have been resolved long ago. It is wrong that you appear to treat it as a mere academic exercise that can be delayed for a further four years. It is also wrong that you and the HSE persist in refusing our requests for a meeting. There are sufficient results from the HSL and Howie tests that confirm that inserting drawing pins into AIB releases many thousands of asbestos fibres with the potential to be inhaled by teachers and children. Cumulatively such exposures are sufficient to cause mesothelioma.

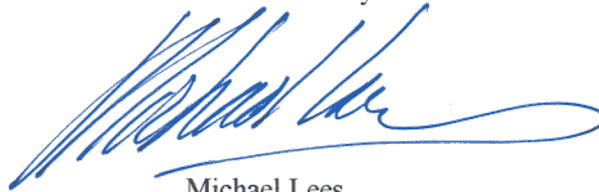
I therefore once again request that the interested parties hold a meeting in an attempt to come to a mutually agreed conclusion. At the end of this process there must be sufficient peer agreement so that the actual risk, whatever it proves to be, can be placed in the public domain. Only then will people become aware of the very real risks from low level cumulative exposure to asbestos.

have one further point.

Under the Freedom of Information Act, the HSE provided me with my wife's file. It covers the HSE's handling of asbestos matters over many years. It is a most disturbing document which gives ample evidence for a formal complaint about the conduct of the HSE. One of the most serious aspects is that HSE officers are prepared to manipulate the truth in order to conceal awkward facts or unprofessional conduct. The HSL have been working in conjunction with the HSE in assessing classroom fibre levels, you therefore cannot distance yourself from the HSE in this matter. The manner in which your tests were designed and the way in which the reports have been written gives me the impression that neither the HSE nor the HSL want people to know the true levels of fibre release and the subsequent risk to health. Your continued rejection of our request for a meeting, your failure to address scientific arguments raised by a fellow professional and your descent into personal criticism, confirms my impression.

This letter contains serious criticism of the HSE and HSL. I have therefore copied it to the Chairman of the HSC, the Director General of the HSE and the Chief Executive of the HSL.

Yours Sincerely



Michael Lees

**Distribution:**

Action copy:  
Secretary of State for Work and Pensions  
Minister of State for Schools  
Chairman of the HSC  
Director General of the HSE  
Chief Executive of the HSL

**Information:**

Assistant Secretary of the NUT  
G. Cox QC MP  
DfES R. Daniels