

Howard Jasmine

From: Kelly Marian
Sent: 17 January 2012 12:30
To: Wilson Alan (CPD)
Cc: Kiss Monika; Stokes Louise
Subject: FW: Freedom of information request: dust and gas levels in tube tunnels
Attachments: LUL REP 182 FINAL AS FH KD JC 31 12 03.pdf; 2004-5 R87435.pdf; 2011 R317726.pdf; AQM - Dust report 2006-07.pdf; AQM dust report 2007-08.pdf; AQM Dust Report 2009-10.pdf; OEM scientific paper 2005 based on IOM report001.pdf

Alan

As promised, more info on dust in tunnels. These reports are focused on the H&S of our staff. As mentioned yesterday, 4Rail carry out regular monitoring for us - all of which indicates that dust is not likely to cause significant harm to our staff or customers.

If you need any more detail, Louise Stokes is LU's lead on this.

Marian

From: Stokes Louise
Sent: 15 November 2011 12:15
To: Olafare Fola (CSC Performance Mgr)
Cc: Kelly Marian
Subject: FW: Freedom of information request: dust and gas levels in tube tunnels

Fola

Response to Max..

Please contact me if you need anything else.

Regards,

Louise

It is highly unlikely that tunnel dust on London Underground has any serious adverse effects on the health of Tube passengers and staff. This conclusion has been drawn from an independent study carried out by the Institute of Occupational Medicine (IOM) in 2003 and ongoing monitoring and sampling by LU since then. London Underground does not routinely monitor Carbon Monoxide, Ozone or Carbon Dioxide. Where appropriate, monitoring is carried out to manage our staff's health where work activities might result in increased exposure.

In 2003, London Underground commissioned the Institute of Occupational Medicine (IOM) in Edinburgh to research and report on the issue. It was commissioned to look primarily at the likely health effects on London Underground staff who spend many of their working hours in an environment containing tunnel dust over the course of their working lives.

The IOM team, together with researchers from the Universities of Aberdeen and Edinburgh carried out new research on the kinds of dust on the Underground – its size, content and whether it can harm the human lung. This was combined with an extensive review of the evidence already available. This study showed that tunnel dust was highly unlikely to be harmful to human health. Almost all of the dust in the London Underground system (around 90%) was iron. The dust also contained trace amounts of chromium (0.1 – 0.2%), manganese (0.6 – 1%) and copper (0.1 – 1.5%). No zinc was detected on any of the samples (<0.1%). Quartz, analysed in respirable dust, accounted for only 1-2%; these measurements were approximate, being close to the analytical detection limit. Average PM2.5 concentrations ranged from 270-480mg/m3; average particle numbers ranged from 14,000 to 29,000 particles/cm3. 80% of the particles had a measured diameter less than 1mm. The composition of tunnel dust has been a topic for discussion for many years and over that time the main characteristics have not changed. To ensure that dust levels remain as low as reasonably practicable London Underground and its suppliers carry out a range of cleaning activities in accordance with the internal mandatory standard ‘Cleaning of the track environment’.

The IOM report, entitled “Assessment of health effects of long term occupational exposure to tunnel dust in the London Underground” concluded that the best way of evaluating any risks to health was by means of comparison with welders, who are exposed to a similar kind of dust. It concludes that comparison with outdoor air pollution dusts could be misleading because of the difference in size and content. The report concluded that dust on the Underground is;

- Highly unlikely to cause serious damage to the health of London Underground workers;
- Highly unlikely to be damaging to the travelling public; and,
- There is no need for more research at the moment but its conclusions should be kept under review.

LU keeps the conclusions of the IOM report under review through regular dust monitoring at a group of stations representative of the entire tube network and in Train Operator cabs. Since 2004, LU has commissioned monitoring and analysis of dust on the Underground (carried out by 4Rail Services). The five reports that have been produced since 2004 broadly show similar results, see table below. To clarify, dust levels are measured in mg/m3 to allow comparison with the Health & Safety Executives workplace exposure limits. Air throughout publicly accessible spaces within London Underground is not filtered, stations are open air environments so air enters and exits freely. At present there is no need to consider filtering the air, and the complications that would accompany this, due to the low health risk associated with tunnel dust.

As the risk level associated with air quality on the Underground is low, this information isn’t published on the TfL website. However the report is freely shared with interested parties on request.

Year of report

Stations dust level range mg/m3

Trains dust level range mg/m3

2004/5

0.01 to 1.14

0.06 to 0.61

2006/7

0.04 to 1.38

0.12 to 0.56

2007/8

0.06 to 0.98

0.13 to 1.44

2009/10

0.04 to 1.38

0.12 to 0.56

2011

<0.02 to 1.23

0.03 to 0.30

Full details on all our studies/reports are contained in the attached IOM report (2003), 4Rail Services reports (2004-2011) and the OEM scientific paper (2005).

From: Kelly Marian

Sent: 02 November 2011 09:25

To: LU CSC FOI; Stokes Louise

Cc: Clayton Ben

Subject: RE: Freedom of information request: dust and gas levels in tube tunnels

Fola

Yes, similar information so we can do this.

Louise - another FOI along the same lines as yesterdays. I'm fairly sure that we don't monitor CO, O3 and CO2 regularly, but lets talk when you're back in the office.

Marian

From: LU CSC FOI
Sent: 02 November 2011 09:18
To: Kelly Marian
Cc: Clayton Ben
Subject: FW: Freedom of information request: dust and gas levels in tube tunnels

Hi Marian, another request, which is likely to go on the sensitive report. Similar timescale to yesterday - can I get a response by the 21st, please? thanks Fola

From: [REDACTED] [mailto:[REDACTED]]
Sent: 02 November 2011 07:34
To: LU CSC FOI; FOI
Subject: Freedom of information request: dust and gas levels in tube tunnels

Dear Sir,

In 2002 a report was made available on the London Underground website archived here: <http://web.archive.org/web/20020207050154/http://www.thetube.com/content/about/report/dust/> into dust levels on the underground and health effects. I was very interested in this report, and I was surprised to find that there appears to be no publicly available figures on dust levels in the tunnels since the report was made available.

I am requesting:

- * All reports created since January 2002 on the subject of dust levels and gas levels (Carbon Monoxide, Ozone, Carbon Dioxide) within the London Underground tube tunnels.
- * All data on dust levels and gas levels collected since January 2002. If this data was collected more frequently than quarterly - I would be willing to accept quarterly numbers.

Regards,

[REDACTED]