TRANSCRIPT OF PROCEEDINGS

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2014 HAZELWOOD MINE FIRE INQUIRY

MORWELL

WEDNESDAY, 4 JUNE 2014

(8th day of hearing)

BEFORE:

THE HONOURABLE BERNARD TEAGUE AO - Chairman

PROFESSOR EMERITUS JOHN CATFORD - Board Member

MS SONIA PETERING - Board Member

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MS RICHARDS: The first witness this morning is Dr Rosemary Lester, the Chief Health Officer, her evidence will be followed by that of Professor Don Campbell, who's been retained by the Inquiry to provide independent expert opinion, and the community witness this afternoon will be Annette Wheatland of Southern Cross Community Care. Would Dr Lester please come forward. 10.03AM

<ROSEMARY ANN LESTER, affirmed and examined:

MS RICHARDS: Good morning Dr Lester, welcome?---Good morning. Thank you. 10.04AM

I'll start where I start with everyone else, could you please state your full name and your professional address please. My full name is Rosemary Anne Lester and my professional address is 50 Lonsdale Street, Melbourne. 10.04AM

You are the Chief Health Officer?---That's correct.

Which is a statutory position created by the Public Health and Wellbeing Act?---That's correct.

You have made a statement to the Inquiry?---Yes, I have.

You have that there in two volumes in front of you?---Yes. 10.05AM

It's a statement of 103 paragraphs with 22 attachments?---That's right.

Some of them voluminous. Have you re-read your statement recently?---I have.

Is there any correction that you wish to make?---No, no corrections. 10.05AM

Is your statement true and correct?---It's true and correct.

I tender that if I may.

#EXHIBIT 46 - Statement of Rosemary Lester. 10.05AM

MS RICHARDS: Dr Lester, I'd like to ask a little bit about your own experience and background. You have provided us with a curriculum vitae which is the first attachment to your statement. You're medically qualified?---That's right, yes. 10.05AM

Completed your studies in 1980, I think?---That's right.

You spent some time doing residency, the standard course for a young doctor?---That's right.

Then you had a good solid period in general practice in the 1980s?---That's right, yes. 10.06AM

From there you took a different course, moved into the public service?---Yes.

Initially worked at the City of Melbourne?---That's right, yes, I was Medical Officer of Health for the City of Melbourne. 10.06AM

That was for several years in the late 1980s?---From 1986-1989.

Then you joined the Department of Health with its various names over the years from 1989?---That's right, yes.

You've held a range of positions in that organisation. Can you talk us through your progression through the Department of Health?---Sure. I entered the Department of Health through the Victorian Public Health Training Scheme which was a two year rotational scheme to provide practical experience in public health. You will see from my CV that, prior to that, or actually just as I was entering, I was doing a Master of Public Health through Monash University and the Victorian Public Health Training Scheme was designed to be a practical complement to the academic studies in public health. 10.06AM 10.07AM

Once I completed that two year Public Health Training Scheme I then continued on full-time employment in the Department, initially as a medical officer within the communicable diseases section where I worked mainly on notifiable diseases and 10.07AM
immunisation. I then spent several years as Immunisation Coordinator, so responsible for the State Immunisation Program.

The next position I went to had a range of responsibilities, including cancer screaming programs, 10.07AM
the genetics programs, perinatal data collection unit, so I had a range of experience there, before coming back to being Assistant Director of the Communicable Disease Control Unit, and from there progressing to Deputy Chief Health Officer and now Chief Health 10.08AM
Officer.

During that time when you were Manager of Prevention and Perinatal Health you actually worked with Professor Catford in the Department of Health for a while?---I did, yes. 10.08AM

In fact, worked for him for a while?---I did work for Professor Catford for a while.

As well as all of those roles in the Department of Health, you've referred to some postgraduate qualifications that you obtained; the first of those was A Masters in 10.08AM
Public Health that you obtained from Monash University?---That's right.

There is another Masters Degree that you also completed through the University of California, Los Angeles?---That's correct. 10.08AM

That's a Master of Science in Epidemiology?---Yes.

For those of us with a loose grip on it, can you explain what epidemiology is?---Epidemiology is the study of the distribution and determinants of disease in populations, so it's the science of looking at health on a population basis, both health outcomes, health risk factors and evaluation of public health programs. 10.09AM

Moving then to your role as Chief Health Officer - - -?---Sorry, could I perhaps just add to that my Fellowship of the Australasian Faculty of Public Health Medicine, so I am recognised as a specialist in public health medicine. 10.09AM

So that's a discrete area of medicine?---That's right, it's again, like epidemiology, it concentrates on the health of populations as opposed to individual clinical health. 10.09AM

Now we'll move to your role as the Chief Health Officer. It's a statutory role and the Public Health and Wellbeing Act is a fairly compendious Act, there's a lot covered in it, but your functions and powers are set out in section 21, after the role of the Secretary. 10.09AM The principal and first in the list is to develop and implement strategies to promote and protect public health and well-being?---That's right.

It's a fairly broad remit?---That's right.

You have a role to provide advice to the Minister or Secretary on matters relating to public health; there's an obligation to publish a public health and well-being report every two years?---That's right. 10.10AM

And then there's the usual anything that's incidental or any other responsibilities that are given?---That's right. 10.10AM

But it's principally a role to develop and implement

strategies to improve public health?---That's right.

There are some principles set out at the beginning of the Public Health and Wellbeing Act that are designed to guide the performance by everyone who has a position or a responsibility under that Act, and these are 10.10AM reasonably familiar because the similar set of principles appears in the Environment Protection Act. They are the principle of evidence-based decision-making, the Precautionary Principle that I discussed with Mr Merritt on Monday morning?---That's 10.11AM right.

The primacy of prevention, principle of accountability and the principle of proportionality, so a public health response should be proportionate to the risk, and the principle of collaboration. 10.11AM

I'd like to dwell a little bit on the Precautionary Principle. The Act states that the principle to guide action is, if a public health risk poses a serious threat, lack of full scientific certainty should not be used as a reason for postponing 10.11AM measures to prevent or control the public health risk?---That's right.

How do you apply that Precautionary Principle in practice?---I think it's matter of balancing the risks that we see and balancing the sorts of interventions 10.12AM that we might put in place. So, it's very important from the start of any particular public health risk that we consider carefully the magnitude of what that risk might pose, and then we consider carefully what are the outcomes or the implications of any public 10.12AM health intervention we might put in place.

If I could take an example perhaps of say a food-borne disease outbreak where we might suspect a particular product of being the source of that food-borne outbreak, if we suspect that and we have what we believe is sufficient evidence to act, then on Precautionary Principle we say, okay, we believe we've got enough evidence to act even though it might not meet full scientific certainty. 10.12AM

We looked yesterday with Professor Brook at an organisational chart of the Department of the Health. I just want to ask you a few questions about where you fit within the Department of Health. I think we saw where you fit within the organisation structure, you report through a Deputy Secretary to the Secretary. 10.13AM

Within your own office, what staff do you have?---As you saw on the organisational chart - - - 10.13AM

We can bring it up again if it would assist?---Okay.

It was tendered as part of Professor Brook's statement?---That's right. So, you will see that I sit alongside the Health Protection Branch, yes, Health Protection is the second light blue box there and I am immediately under it. The way that my office is structured is that I have three small programs who report directly to me. I also have the public health medical expertise in my office which I use to supplement the staff in the other various health protection units. So, I have three senior medical advisors, one of whom is my deputy, and then I have two more junior public health medical officers. So, although I appear separate from the Health Protection Branch, on a day-to-day basis both me and my staff work 10.13AM 10.14AM 10.14AM

very closely with the other health protection branches.

You heard Professor Brook yesterday talk about the environmental health branch which has 8.9 EFT; one of my senior medical advisors plus one of the junior public health medical officers is assigned to work with the Environmental Health branch to supplement their workforce. So, I do the same with all of the other units in health protection, so the TB unit, legionella control, communicable diseases, immunisation, food safety, I'm working on a day-to-day basis with those and my staff are working on a day-to-day basis with the staff in those units so that we form an integrated team. 10.14AM 10.15AM

Just to be clear about the environmental health support that's available to you, because that was the relevant expertise in this instance - - -?---That's right. 10.15AM

- - - there are almost nine staff in the health protection area?---That's right, yes.

Do they work as a unit?---They work as a unit, that's right.

And their expertise is available to you?---As I said, I work with them on a day-to-day basis. 10.15AM

In addition, you have a medical advisor who also works on environmental health matters with the environmental health team?---That's correct.

Have I understood that correctly?---That's correct. 10.16AM

Just to get an idea of the size of the people in your office, I think I understood you to say you had five medical advisors reporting to you?---That's right, I do.

And in addition to which you have assistance from the Health Protection team?---That's right. 10.16AM

If you need it?---Yes.

In terms of communication support, where do we find that, communication being a fairly significant part of your role?---That's right. I do have a small communications team that reports directly to me and that consists of a manager, two full-time staff and one part-time staff. But the Department, as you heard Professor Brook say yesterday, has a shared service for emergency management between ourselves and the Department of Human Services, so that also has a communication function, so my communication staff obviously work extremely closely with the communication staff from the shared service. 10.16AM 10.16AM

Then of course, in an incident such as this, there's the whole-of-Government co-ordination of communication. 10.17AM

But you have a dedicated communications staff within your office?---I do, yes.

In addition to your role under the Public Health and Wellbeing Act there's also Emergency Management with which we're concerned here. Do I understand correctly that you have no statutory role under the statutory Emergency Management arrangements?---Under the Public Health and Wellbeing Act I have a range of public health risk powers, so I am able to exercise powers in order to investigate, eliminate or reduce a risk to public health. 10.17AM 10.17AM

If an incident is of such magnitude that it would be classified as a public health emergency, that is a decision that I advise the Minister on and the Minister is required to discuss that with the Minister for 10.17AM

Police and Emergency Services and the Chief Commissioner of Police. The actual declaration of a state of emergency, if that was required, goes through that mechanism. Once that's been declared, then I have particular public health and emergency powers which are able to be then exercised. 10.18AM

So when we look at the Emergency Management Manual, there's actually no mention of the Chief Health Officer in that section that explains the roles of the different agencies?---That's right. 10.18AM

The Department of Health is designated the control agency for health emergencies, to use a broad term?---Yes.

And then there is an internal document within the Department of Health, the Public Health Control Plan?---That's right. 10.18AM

That designates you as the Incident Controller for those emergencies?---That's right.

I take it, that's because of the statutory powers you have in relation to a public health emergency under the Public Health and Wellbeing Act?---That's right, yes. 10.19AM

But we're not dealing with that kind of emergency here, we're dealing with a fire. So, it's your support functions that are important in this instance?---That's right.

Again, there's no specific role given to the Chief Health Officer in the Emergency Management Manual where the Department of Health is a support agency; is that correct?---No, there's no specific mention there. 10.19AM

But there is clearly a role when it comes to relief and recovery to provide advice to the Incident Controller and to other support agencies involved?---Well, it's 10.19AM

more than relief and recovery; my role is to provide public health advice on any incident to the relevant Incident Controller. So, as in this instance, I would do that from the start of an incident and not just confine my advice to relief and recovery. 10.19AM

That's not spelled out, however, in the Emergency Management Manual, is it? If we can look at it. If we can look at Attachment 2 to Dr Lester's statement. If we go to page 7-36. Under the heading "Response", the Department of Health is the control agency for the 10.21AM health emergencies that we've identified. Then as I read the remainder of those dot points, it's about the State Health Emergency Response Plan and ensuring that health services are available to meet the health needs that are caused by any particular emergency, and 10.21AM there's nothing in there about provision of public health advice, is there?---No, there isn't, but that's in practice the role that I play.

We do see at the very last dot point on the page under, "Relief and recovery", "Provide advice, information and 10.21AM assistance to affected individuals, communities, funded agencies and municipal councils." And that's what you were doing in the course of this incident, is it not?---That's correct, yes.

Can I ask you now about the Bushfire Smoke Protocol which is 10.21AM a document that you've attached as an Attachment 5 and you refer to it in paragraph 19 and 20 of your statement. This is a document that was developed after the 2006-2007 alpine bushfires?---That's right, about that time, yes. 10.22AM

And they burned for weeks and weeks and weeks and at various

times during that period there were heavy areas of smoke over settled areas of Victoria, including Melbourne and also elsewhere. That incident was the prompt to develop this Bushfire Smoke Protocol, have I understood that?---I understand that. I wasn't in this role at that time, so I wasn't involved in the Environmental Health Unit at that time, but that's my understanding, yes. 10.22AM

Can you explain how the protocol works in practice? We have some tables that inform a level of response. There's table 1 at page 11 of the document?---This is the agreed protocol that we have with the Environment Protection Authority, which means that we have agreed actions and agreed health messages prior to the summer season, so we're not trying to think of messages when an incident occurs. 10.23AM 10.23AM

The table here provides us with information as to, according to what the EPA either measures or predicts is going to happen, that results in either a low level smoke advisory put out through a media release or a high level smoke advisory put out through a media release, and those media releases contain messages from me as to what people need to do to protect their health. 10.23AM

Given that we know that bushfire smoke can have acute health affects on health, health effects, then we need to get the message out from the start as to what people need to do to protect their health. 10.24AM

The protocol is based on air quality categories that are determined principally by PM 10 measurement?---That's right. 10.24AM

The PM 10 standard in the State Environment Protection Protocol for ambient air quality is 50 µg/m³?---That's right.

Over a 24-hour period. So we see that the low level smoke, the low level, kicks in once levels exceed 50 µg/m³. I understand that this document was developed before you came into the position, but are you able to say why PM 10 is used rather than PM 2.5 as the measure?---My understanding is that the vast majority of the monitoring which the EPA does, or the vast majority of the monitoring which they do is PM 10, so hence this is based on PM 10. 10.25AM 10.25AM

So the protocol is tailored to the monitoring that's readily available?---That's right, and we know what the health effects of PM 10 are. In more recent years a better understanding has come of the health effects of PM 2.5, but PM 10 has been the standard for looking at health effects up until sort of recent years. 10.25AM

Then it's immediately noticeable on this table that there's one low category, but there are three high categories, all of them the same colour and everything in excess of 155 µg over a 24-hour period is designated high. 10.26AM

Do I understand correctly that the action that is taken under this protocol doesn't vary between the different levels of high?---That's right. The messages are the same for those levels of high, that's right. 10.26AM

Which then prompts the question, why have three levels if the action is always the same, and the action is to issue a high level smoke advisory?---Sure. It's important to remember that this protocol is designed for a relatively short-term event, such as a bushfire 10.26AM

which usually only lasts for maybe a few days or a week close to a community. It's felt that, although we have those internal classification levels, that it's important to keep the message as simple and understandable as possible for the community, which is why for this protocol which is written for a short-term event, and these messages are being issued day-by-day, that it's important to keep those as simple and understandable as possible; because, even though we do have those internal classifications, the actions that people need to take to protect their health are the same. 10.27AM 10.27AM

Do they not vary as the levels of fine particulate matter in the air increases?---As I mentioned, this is designed for a relatively short-term event. What we know is that particulate matter can have effects on health, so it can exacerbate both cardiac and respiratory disease; it can also have the short-term irritant effects which are obviously very distressing, irritation to the nose, eyes, respiratory tract, headaches, and those things are obviously very distressing, but what is of more concern to us is the fact that bushfire smoke can exacerbate cardiac and respiratory disease. 10.27AM 10.28AM

The message that we need to give when there's a high level of smoke in the air is for, not only those in the most vulnerable groups which we primarily direct our message to, but for everyone to avoid or reduce outdoor physical activity as much as possible. So again, we're trying to keep the message simple and straightforward and understandable to the community. 10.28AM 10.28AM

Just to look at the message, if we look at page 22 of the

document, that's the template for a high level bushfire smoke advisory, it has some quotes from you that I gather are pre-authorised quotes?---That's correct.

This is a document that will be familiar to anyone who was keeping an eye on the EPA's alerts during the Hazelwood Mine Fire?---That's correct. Yes, the first of these was issued on 11 February and they were issued very regularly after that. 10.29AM

And they really didn't change in their content, did they?---No. 10.29AM

The only variation was between the low level and the high level?---That's right.

The advice that is given about precautions that might be taken is really that people should avoid prolonged or heavy physical activity?---That's right, yes. 10.30AM

Otherwise, people should take their medication and consult their doctor?---That's right.

So there's no advice in here that people are best avoiding inhaling smoke altogether?---The advice to avoid prolonged or physical activity, yes, is designed for people to minimise their exposure to smoke. 10.30AM

But there's no advice in this that people should, for example, stay indoors or, if possible take a break out of the area that's affected by smoke, or given the likely duration of the event, to consider leaving the area for a period?---Those more detailed messages are available on our information that we have on our website, and those more detailed messages that you've mentioned I always quote in any media interviews that I do about smoke. So, again, it's a matter of keeping the basic messages as basic and understandable as 10.30AM 10.31AM

possible.

MEMBER CATFORD: Could I just say, I think table 2 is helpful here because there is some variation according to severity or vulnerable groups. It would appear there's an escalating scenario there. 10.31AM

MS RICHARDS: If we look at page 12, table 2, there is escalating cautionary health advice in the various high, very high and very, very high categories, but that's not reflected in the high level smoke advisory, is it?---No, but it is reflected in, as I said, the 10.31AM messages that we have on our website and those are the messages that I always use in any public comment about smoke.

Is there any reason why the high level smoke advisory could not be tailored to actually reflect the cautionary 10.31AM health advice that's set out in this table?---We could certainly review the wording of that.

So that, when the PM 10 levels are predicted to be in the hazardous category, that the advice actually includes advice that people in vulnerable groups should remain 10.32AM indoors?---We could certainly look at reviewing that wording.

MEMBER CATFORD: I note that in table 1, PM 10 for 1 hour is also a trigger. Just explain to us why you have a 1-hour trigger and also a 24-hour trigger?---Those 10.32AM levels are the standards which are regarded as the unhealthy or hazardous. So you obviously got a lower level for 25 hours as opposed to 1 hour, so it's really just a set of levels, and according to the prediction that we receive from the EPA, which is again based on 10.33AM information from the Bureau of Meteorology, then they

will advise us that they think PM 10 is going to be elevated for 24 hours or PM 10 is going to be elevated for an hour or a shorter period of time.

MS RICHARDS: In section E of your statement you set out some information about brown coal fires and brown coal smoke. At paragraph 31 you make a comparison between the composition of smoke from a brown coal fire and the composition of smoke from a bushfire. The differences between the two are these, are they not; that carbon monoxide is present in higher levels from brown coal smoke?---Yes. 10.33AM 10.34AM

Polycyclic aromatic hydrocarbons and also volatile organic compounds are present in coal smoke, brown coal smoke, in the way that you don't find in bushfire smoke?---Well, they will be present in any smoke, but yes, they're a concern in coal mine fire smoke. 10.34AM

But they're the two distinguishing features of brown coal smoke as compared to bushfire smoke?---Well, there's also a distinguishing feature between the brown coal found in the Latrobe Valley, in that the brown coal found in the Latrobe Valley is different to other brown coal and it produces different sort of smoke from bushfire smoke in that it has actually lower levels of key pollutants such as nitrogen and sulphur, so you actually have lower levels of the nitrogen oxides and the sulphur oxides in the brown coal found in the Latrobe Valley than you do in other sorts of smoke. 10.34AM 10.35AM

So at least we didn't have a risk of acid rain during the mine fire?---That's correct.

That's something to be glad for. But those are the two things that set aside brown coal smoke from bushfire 10.35AM

smoke: The carbon monoxide levels are higher and there is a greater need to be concerned about PAHs and VOCs?---Yes, certainly it's something we need to take account of, but we know that the major health effects on smoke that we need to be concerned about are carbon monoxide and particulate matter, so they're the really two top line things that we know we need to be immediately concerned about. 10.35AM

Of course another difference between a brown coal fire and a bushfire is that a brown coal fire can go on for a great deal longer than a bushfire?---That's right, as unfortunately we saw in this event, although you did mention that previously there had been unfortunately bushfires which have gone on for a long time. 10.36AM

But with a brown coal fire the fuel is not exhausted nearly as quickly - - -?---That's right. 10.36AM

- - - as is usually the case with a bushfire?---That's right.

You set out at paragraph 32 a number of variables that will influence the public health effects of exposure to a brown coal fire. Do I take it that these are all related to exposure to fine particles and don't include the separate risk of carbon monoxide exposure?---The carbon monoxide exposure is more of an acute toxic exposure. The particulate matter exposure is something that we'd be concerned about the longer it goes on. So, the particulate matter exposure is, we're not only concerned about the height and the level of the exposure, but then the length of time that people spend exposed to the smoke. Of course, that is the same for carbon monoxide as well, but carbon monoxide tends to 10.36AM 10.37AM 10.37AM

be more acutely toxic. So these sorts of variables really relate to any of the pollutants in smoke, so of course any of the pollutants are related to the size of the fire, what the level of fine particles obviously relates to fine particles, the known effects to the body et cetera, so it really relates to any of the pollutants in the smoke. 10.37AM

But there are these two separate risks that have to be recognised and they do have different sets of considerations around them; fine particles and carbon monoxide?---That's right, yes. 10.38AM

We've had some evidence over the last couple of days about ambient air quality standards, and just to recap on some of that evidence, the ambient air quality standards in Victoria are based on the National Environment Protection Measures?---That's right. 10.38AM

Those in turn are based on epidemiological research and are set at levels that are understood to be referable to adverse health effects?---That's right. They're set in exactly the way you've said, but with reference to a longer period of exposure, so with reference to continuing exposure. So the standards also allow for particular exceedances per year which relate to the fact that there are going to be bushfires, there are going to be events which are uncontrollable which will lead to poorer air quality for some days in the year. 10.38AM 10.39AM

Just to be clear what those exceedances are, Mr Merritt provided us with the State Environment Protection Policies. The relevant one is Attachment 7 to his statement. Paragraph 68 of his statement on page 12. 10.39AM

If we can go to the sixth page and go to schedule 2 at

the bottom of that page?---Yes, I have it.

The allowable exceedances we see in the fifth column, so for carbon monoxide the allowable exceedance, because there's only one, is one day per year?---Yes.

So, the goal is that the level of 9 ppm over an 8-hour period would only be exceeded once in a year?---That's right, that's the goal. 10.41AM

We don't find in this table PM 2.5, but we do find PM 2.10 and the goal for PM 10 is that level of 5 µg/m³ not be exceeded in more than five days in a year?---That's right. 10.41AM

The other measure of particulate matter is visibility reduction, and that that distance of 20 kilometres not be exceeded in more than three days a year?---That's right. 10.41AM

So, although they are set with a long-term view, the number of exceedances that are allowed under this standard is quite small?---That's right, it is.

I don't think we have a number of exceedances for particles at PM 2.5 because the goal is to take measurements with a view to setting a standard?---That's right. I suppose, just to add to that of course, as other witnesses have told you, that the Hazelwood Coal Mine Fire obviously was a very complex and almost unique event in its scale and magnitude, so the exceedances are written for usual conditions. I think something of the scale and magnitude of this is, as you've heard from other witnesses, is really quite complex and unique. 10.42AM

But clearly, we were well in excess of the allowable exceedances on all of these measures?---Yes, we were in 10.42AM

excess of those, that's right.

The ambient air quality standards having been set by reference to the best available epidemiological research are a very good guide to decisions and advice that should be given in relation to public health, are they not?---That's right, because they are based on evidence as to the health effects of smoke. 10.43AM

We had evidence over the last couple of days about the fact that there's only an advisory standard at this stage for PM 2.5. Mr Merritt's evidence was that one of the difficulties in setting a mandatory standard is that scientists cannot agree on a safe level. You heard the evidence yesterday, I believe, of Dr Torre and Ms Richardson who were agreed that there is in fact no safe level of exposure to PM 2.5. Do you agree with that evidence?---My understanding of the reason why there hasn't been agreement is not actually that there hasn't been scientific agreement. I don't believe that that's correct. Yes, my understanding of the evidence is that there is no safe level of PM 2.5, that health effects are seen under the various standards that have been set, but of course nothing in life is without risk, and in the perfect world we would have no particulate matter in the air, but we're not in a perfect world and there has to be some setting of levels which are achievable, both economically feasibly achievable having regard to the best health outcomes that we can take. 10.43AM 10.44AM 10.44AM

We also had evidence from Ms Richardson yesterday about levels that have been adopted in other countries that are significantly higher than the advisory standard, 10.44AM

and it's a fair conclusion to draw that those levels are driven by what's achievable in the conditions prevailing in those countries. For example, China I think the level was 75 µg/m³ as opposed to 25 µg/m³, so there's a compromise to be struck between the accepted scientific view that there's no safe level and the need to set a level that is achievable and achieves good health outcomes?---That's right, yes. 10.45AM

Returning to your statement, if we can put aside Mr Merritt's statement for the moment, you discuss, starting at paragraph 36, the short-term and long-term health effects of exposure to smoke and ash. I'd like to understand what you mean by short-term and what you mean by long-term?---What we know from the short-term health effects of smoke is that - I put them into two categories, so firstly there's the short-term health effects which come from the irritation, so the surface irritation of the eyes, nose, throat, breathing passages which can make people feel very uncomfortable and very distressed. The other category that we're concerned about is particularly the exacerbation of heart and lung disease. So that we know that exposure to particulate matter increases the risk of people getting exacerbations of heart and lung disease, and in particular those vulnerable groups that we've listed throughout all of our advice. There's those two categories of short-term effects that I look at. 10.45AM 10.46AM 10.46AM

They're short-term effects and long-term effects. Before I leave short-term effects I should just ask you this: There's been some evidence, and certainly the submissions that the Board's received reflect this, of 10.46AM

people experiencing nose bleeds during the time that they were breathing in smoke. Is that a short-term health effect that is associated with smoke inhalation?---Well, I hadn't heard that - I mean, I had that reported by the community to me; it hasn't particularly featured, but I think that that's just an effect of irritation of the nasal passages from smoke, obviously a very distressing thing to happen. 10.47AM

Short-term health effects and long-term health effects you've discussed - - -?---I'm sorry, I haven't discussed long-term health effects, I discussed two types of short-term health effects. 10.47AM

Long-term health effects are well described in relation to long-term exposure to particulate matter. What I've described is two categories of short-term health effects that are well-known and well described from short-term exposures to bushfire smoke or other smoke. 10.47AM

What's well described in the literature is long-term health effects, and they include respiratory disease, cardiac disease, some sorts of cancers, some effects on birth weights of babies, and the literature is virtually confined to long-term exposure. So the literature on that basically comes from exposures which are usually listed as year or more, so it's basically living in a polluted city. We know what living in a very polluted city for a long time - we know that those effects will happen. 10.48AM

So long-term exposure, one year or more; short-term exposure, a day or a week?---It's usually described in the literature as days to weeks. 10.48AM

The exposure in this case didn't really fit comfortably in either category, did it?---That's right, it didn't fit comfortably in either category, and that's why we've acknowledged and other witnesses have said that there is a gap in the literature about the sort of exposure that we saw that didn't fit neatly into short-term, so there is a gap there and that's what we've acknowledged by saying we'll undertake a long-term health study. 10.49AM

I did say consistently through the event that, because we don't have any evidence that short-term exposures result in long-term health effects, that we would not expect to see long-term health effects from this exposure, given that short-term health effects in the literature are described as days to weeks, so we would not expect to see it, but of course we cannot be sure about that. The community are obviously very concerned about that, we would be very concerned if we did see long-term health effects, so that's why we've committed to the long-term health study. 10.49AM

It's the case, isn't it, that the dose response relationship between exposure to fine particles and the long-term health effects that you've described is not well understood?---We know that the body will recover from exposure to high levels of fine particles which then go away, as I said, will produce short-term health exposure but the body will recover well when that exposure goes away. 10.49AM 10.50AM

That's not quite the question I asked. I'm asking you about the long-term health effects that you've described. The dose response relationship is not well understood, it's not clear how much or for how long exposure is 10.50AM

likely to increase cardiac disease, lung disease, the other longer-term health effects, cancer, that you've identified?---For long-term health effects, as I've said, the literature describes them from long-term exposures, so it is understood that the higher the level of particulate matter, the greater the risk of long-term health effects.

So the higher the level and the longer the exposure, the greater the risk?---That's right, yes.

10.50AM

And there's no clear dividing line between short-term exposure and a long-term exposure?---Well, there is in the literature. As I said, we don't have good literature in the middle, we have good literature on short-term exposures, which as I've said are days to weeks as described in the literature, and we have good literature on long-term health effects from long-term exposures.

10.51AM

But the literature in the middle that might inform where the dividing line is, there just isn't any?---Yes, there's a gap there.

10.51AM

At paragraph 40 you identify a number of groups who are particularly vulnerable to exposure from smoke from a brown coal fire. Could you talk through each of those groups and explain the particular reasons why each of them is vulnerable?---I think it is explained there in my witness statement, that if we talk about young children, firstly their lungs are developing and they have a higher respiration rate, so a higher breathing rate relevant to their body weight, so they're going to take in more smoke and therefore more particulate matter relative to adults.

10.52AM

10.52AM

The elderly, which we usually describe as people over - - -

Just before you move away from children, that susceptibility gradually reduces as the child grows?---That's right, yes, as they become more like adults. 10.52AM

So a 3-year-old would be more susceptible than an 11-year-old for example?---That's right, yes.

But again, there's no clear dividing line?---There's no clear dividing line, no.

Sorry, I interrupted you?---That's okay. So older people will have a decreased reserve of their heart and lungs, so any strain that's put on that by breathing in fine particles will increase their risk relative to a younger healthy adult. 10.53AM

In your advisories you identified 65 as the age at which people enter that vulnerable group. Am I right in understanding that that vulnerability, generally speaking, increases with age?---Yes. I mean, the 65 is obviously a relatively arbitrary level - - - 10.53AM

Yes, we all know some very fit 65-year-olds?---We do know some very fit 65-year-olds and obviously there are some very fit 80-year-olds and some very unwell 67-year-olds. So it is arbitrary, or relatively arbitrary, and of course it relates to the next point which is people who have existing heart or lung disease. As you get into the older ages, the more likely you are to have existing heart or lung disease. 10.53AM 10.54AM

Then there's a separate group of vulnerable, unborn babies?---Yes, there is now emerging evidence that, although it's not regarded as yet totally causal, that exposure to fine particles over one of the trimesters, 10.54AM

which is a three month period, may result in low birth weight in babies.

When it comes to exposure to carbon monoxide, do we have the same vulnerable groups for similar reasons?---If you have high enough levels of carbon monoxide, that will be acutely toxic to everyone, but again, these groups still will apply. Carbon monoxide, as you will have read, displaces oxygen as it's carried around the body, so for people, say older people or people with chronic heart or lung disease, they are less able to cope with an insult of that kind. 10.54AM 10.55AM

Again children, because they have a higher respiratory rate, they are more likely to be active, outdoors - - -?---That's right, they are going to take in more. 10.55AM

- - - they are going to take in more and reach harmful COHb levels sooner than a fit adult?---Yes.

Professor Campbell suggested in his report that a separate group can be identified, people of lower socio-economic status as being, as a group, more vulnerable to the effects of both fine particles and carbon monoxide. Would you agree with that proposition?---I personally haven't seen that proposition. We do know that people in lower socio-economic groups unfortunately tend to have more chronic diseases, so it may well relate to that. 10.55AM 10.56AM

Moving to this fire, the fire that started in the Hazelwood Mine on 9 February. I understand from your statement at paragraph 42 that you became aware of the fire for the first time on 10 February?---That's correct. 10.56AM

You were immediately concerned that fine particles from the

smoke would pose the greatest public health risk?---That's correct.

But at that time carbon monoxide hadn't registered as a particular risk for you?---No, we were aware of course that carbon monoxide was a hazard from brown coal fires, so it was both carbon monoxide and particulate matter that we were concerned about from early on. 10.56AM

You then say that you took some steps to obtain air quality information from the EPA?---That's correct.

We've heard evidence from the EPA about how they went about obtaining that. While that was happening the seriousness of the fire was assessed and appreciated at State level; would you agree with that?---Well, again, I think as you've heard from other witnesses, that there were many fires in the landscape in Gippsland during that first week, there were many fires which ignited on that weekend of the 8th and 9th, and those fires progressively were brought under control in that week, as I understand from Commissioner Lapsley. 10.57AM

There was a material change, again as I'm advised, there was a material change in the fire on the weekend of the 15th and 16th which really brought that into prominence as the hazard that we needed to deal with. But remember that - - - 10.58AM

I'd like to suggest to you that the seriousness of the fire was appreciated earlier than that. Are you a member of the State Emergency Management Team?---I am, yes. 10.58AM

Did you participate in meetings of that group during the week commencing 10 February?---I did, yes.

One of the pieces of information that is presented at those meetings is a State Control Centre Situational 10.58AM

Report?---That's right, yes.

There were reports presented from 12 February that identified that the Hazelwood Mine Fire would burn for up to a month?---Yes, I remember seeing that statement there. I think it's fair to say that there were varying estimates after that statement was in that situation report, but there were then varying estimates of how long the Hazelwood Fire would burn, and there was some optimism followed by some pessimism, so throughout - - - 10.58AM 10.59AM

Commissioner Lapsley's evidence was that from 12 February the estimate at the State Control Centre and for those involved in the State Emergency Management Team was that the fire would burn for up to a month and that, while he may have been more optimistic in his public statements, he considered that one month was the estimate that held, and it turned out to be quite accurate?---That did turn out to be accurate. 10.59AM

Did you have separate discussions with Commissioner Lapsley about the likely duration of the fire?---I don't recall specific discussions with him. Our focus during this first week of the fire was making sure that we got the messages to the community about the hazard which was primarily carbon monoxide and particulate matter, and that hazard, as you've heard described, is the same for bushfire smoke as for coal mine smoke. So, whether it was the bushfire smoke, which we know there was a lot of smoke around, or smoke from the coal mine which was obviously mixing with it, the major hazards were carbon monoxide and particulate matter. 10.59AM 11.00AM 11.00AM

The messages that we have in our pre-agreed

protocol with the Environment Protection Authority were the messages that we needed to get to the community so that they knew what to do to protect their health, whether it be from the bushfire smoke or whether it be from the coal mine smoke. 11.00AM

Those messages are the ones that we looked at earlier under the Bushfire Smoke Protocol?---Yes.

They say nothing about carbon monoxide, do they?---They don't say anything about carbon monoxide but nor do they say anything about particulate matter. I don't 11.00AM think it would be particularly helpful in public messages to discuss those things; what we need to put in public messages is, what do you need to do to protect your health, what's the information that you need to know how to protect your health? 11.01AM

And the advice that was provided was, avoid physical activity outdoors and, if you have asthma or if you have a pre-existing condition, take your medication and consult your doctor?---In those media releases, that's correct. There were many other communication 11.01AM activities which began on 11 February, and if I take you to attachment - - -

I actually don't want to go there at the moment - - -?---If we can come back to that.

- - - what I am trying to understand at this point is your 11.01AM appreciation of the likely duration of the fire. Commissioner Lapsley has given evidence that from at least 12 February it was understood at State level that the fire was likely to burn for up to a month, although he confessed to being more optimistic in some of his 11.01AM media interviews. Was that your understanding from

12 February, that it was likely to burn for up to a month?---Well, that statement was made and as I said, the information that I heard Commissioner Lapsley say, and as you said in media interviews, was that there was varying levels of optimism at times as to perhaps it could be put out earlier, and then unfortunately setbacks from that.

You were aware of the situation report estimate that it would likely burn for up to a month?---That's right, yes. 11.02AM

You were also aware of some more optimistic estimates?---That's right.

Perhaps two weeks?---Yes.

Did you seek clarification from Commissioner Lapsley about which was the more likely duration?---Not specifically, no. 11.02AM

That's a fairly critical piece of information, was it not, Dr Lester, how likely the fire was likely to burn - sorry, how long the fire was likely to burn?---I was involved in the State Emergency Management Team as time went on, so I was continually discussing the fire at that level with the State Emergency Management Team, but what I needed to do was to assess the immediate hazard. There were two parts to that immediate hazard that I needed to address; the first was the carbon monoxide level and the second was the exposure to particulate matter, so in those early days the duration of the fire was not - would not - whatever duration the fire was going to take would not have changed the messages that I had to put out in those early days. 11.02AM 11.03AM 11.03AM

But given that the risk to health increases with the

duration of exposure, surely the likely duration of the fire was the critical consideration for you in that first week?---The exposure to fine particles, as I said, we know that it causes acute health effects and we know that the body recovers quickly after the level of fine particles falls, so what we needed to do was act on the advice we were given from the Environment Protection Authority; prior to that we acted on general advice about what we knew about particulate matter. We needed to act on advice from the Environment Protection Authority as to what the particulate matter was, and we were keeping a very close eye on that as - day-by-day we were keeping a very close eye on that as to what our advice should be to the community. 11.03AM 11.04AM

Did you during the first week make an assessment of the likely duration of the fire in the mine?---Not in that first week because the advice we needed to give was predicated on what are the levels at the moment. 11.04AM

Your evidence is that the risk increases with the duration of exposure?---That's correct. 11.04AM

So it's important to understand the likely duration of exposure at an early stage, is it not?---That's correct, but that's what we do through monitoring - - -

That's going to guide the advice that you give the public about what you should say?---That's right, that's what we need to monitor day-by-day. 11.05AM

But in the first week I understand your evidence to be that you did not make an assessment of the likely duration of the fire?---I was present at many of the State Emergency Management Team meetings where the duration of the fire was discussed, yes. 11.05AM

And the advice that is recorded in the documents is that the fire was likely to burn for up to one month?---That's correct, but I would come back to the fact that the advice we needed to give to the public was based on the level of pollution that we saw in the air at the time. We were assessing our advice day-by-day based on that exposure.

So you were providing advice on a day-by-day basis?---Yes.

Rather than in that first week assessing the likely duration of the entire event?---Yes, because although, as you will see from the air quality charts, although the fire burnt for quite a long time, the air quality was very variable during that time. So it's not reasonable to say, well, the fire will burn for a month and therefore the air quality will be equally bad for a month; the air quality varied quite significantly throughout the duration of the fire.

Yes, but the duration of the fire was one critical piece of information because, until the fire was out, the smoke wasn't going to clear, was it?---That's correct, but I come back to the advice we needed to provide on a day-to-day basis for the public was dependent on the day-to-day particulate matter and carbon monoxide in the air. I mean, I hope we will come to - later we'll come to the fact that my advice escalated as the fire went on. My advice about taking regular breaks from the smoke, taking respite from the smoke escalated as time went on, but I don't accept the fact that, because the advice in the first week was, it would burn for a month, that our advice would have been any different to what it was during that first week.

We will, of course, work through the advice that you provided during the course of the fire. It's clear from paragraphs 43 and 44 of your statement that you were concerned at an early stage to obtain some data from the EPA about what the air quality in fact was. 11.07AM Dr Torre and Mr Merritt have explained what they did after your request on 11 February.

Did you understand towards the end of that first week that it was going to take some time before the highest possible quality data was available for you 11.07AM about fine particulate matter and carbon monoxide?---We were requesting of the EPA that information and the information that we were given from the EPA was that it does take some time for instruments to be calibrated before they could give us definitive information as 11.08AM opposed to indicative information.

But you did understand that in the interim they were able to provide some indicative information about air quality?---That's right.

To begin with based on visibility reduction?---That's right. 11.08AM

But also based on handheld and temporary monitors that were in place?---That's right.

You understood by the end of the first week, by Friday the 14th, that measurements of fine particulate matter and carbon monoxide in the south of Morwell were 11.08AM significantly higher than those being recorded at the Hourigan Road site in the northeast of the town?---We first received advice on the carbon monoxide level away - so I'll leave carbon monoxide level in the mine, which is obviously an occupational health and safety 11.09AM issue for people in the mine. I was first advised of

an elevated level away from the mine or on the mine edge on Saturday the 15th when I was rung by staff from the Incident Control Centre about the elevated instantaneous reading that eventually led - or quite quickly led the Incident Controller to issue the warning. That was the first information that I had about carbon monoxide in the community from the EPA. 11.09AM

From the next day, 16 February, we began to receive again spot readings from the EPA on the level of carbon monoxide. The development of our Carbon Monoxide Response Protocol meant we needed more systematic rolling average with precise locations of where the readings were being taken. We needed the readings in that sort of systematic format to be able to take informed, considered decisions about what we needed to do about carbon monoxide. 11.09AM 11.10AM

It was Mr Merritt's evidence that in an emergency situation, particularly in the early stages of an emergency, sometimes you have to make do with indicative data?---Yes, that's right. 11.10AM

If that's the only information that is available, it's what should guide a decision or advices provided. Do you agree with that?---That's right, yes.

Over that weekend of the 15th and 16th you only had indicative data available about air quality on the southern side of Morwell?---That's right. 11.10AM

Do you agree with that?---Yes.

And so that was the only thing on which you could base a decision or advice?---That's right.

Before I get to the events of that weekend I'd like to go to a community information sheet that was prepared by the 11.10AM

Department of Health, it's at Attachment 7 to your statement, you refer to it in paragraph 53. As I understand what you say in paragraph 53, this community information sheet was prepared and distributed at the community meeting in Morwell on 14 February?---It was. That was my understanding, the first community meeting that was held. Senior staff from my office attended that meeting, handed out this written information to the community. The feedback that they provided to me from that meeting, they also spoke at that meeting, answered community questions, and the feedback that I had from that meeting that the information was well received. 11.11AM 11.11AM

We see from a handwritten annotation at the top right-hand corner that you approved this before it was distributed?---That's right, yes. 11.12AM

Approved it on 14 February, I assume, before it was distributed?---Yes.

Can we have a look at the advice that was provided in the information sheet. On the second page there's a section starting at the bottom of the first column called, "Protecting your health." There's a range of practical options that are provided for people in that column about how they can reduce the health impact of the smoke. The last of those is, "During extended, very smoky conditions, sensitive individuals should consider temporarily staying with a friend or relative living outside the smoke-affected area."?---That's right. 11.12AM 11.12AM

That's very practical advice, the best way not to breath in the smoke is not to be where the smoke is. That was 11.13AM

advice that never appeared in any of the smoke advisories, did it?---Well, it appeared in all of this other information which we gave to the community, so it appeared in numerous fact sheets which were given out through numerous channels on our website obviously, given out through the community engagement activities, so the fact that it didn't appear in the EPA standard releases didn't mean that it wasn't available through many other channels and - - - 11.13AM

Yes, but the EPA's - - -?--- - - - through my media interviews as well. 11.13AM

- - - smoke alerts quote you, and they were issued day-by-day, were they not?---Yes.

They certainly don't include a suggestion that people might consider temporarily removing themselves from the smoky area?---No, they don't. 11.14AM

Towards the top left of that page, at the conclusion of a section that explains the risks of carbon monoxide both to firefighters and to community members, there's a statement that handheld monitors have surveyed for carbon monoxide levels in the Morwell township and around the perimeter of the mine, "To date levels of carbon monoxide are not a health concern for people [who] are away from the actual coal fires, ie outside the boundary of the mine." What data did you have available as at 14 February about carbon monoxide levels outside the boundary of the mine?---What we know about carbon monoxide is, it is much more likely to be - - - 11.14AM

That's not the question I asked you. The question was, what data did you have on 14 February about carbon monoxide 11.15AM

levels outside the boundary of the mine?---We didn't have specific data, but I will bring you back to the fact that we know that carbon monoxide is much more a hazard for people in an enclosed area or very close to the mine, it is much less likely to be a hazard for those in the community. 11.15AM

But the fact was that as at 14 February you really had no data about carbon monoxide levels outside the perimeter of the mine?---No, we didn't have specific data on that. 11.15AM

And yet you're prepared to provide this assurance to people that levels of carbon monoxide were not a health concern?---Sorry, I'll need to check the record there, because we have said handheld monitors have surveyed, so I'm sorry, I will need to go back and check what data we did have on that because we have said that handheld surveys were being done there, so I'll need to check that. 11.15AM

I'd be grateful if you would, because it would be surprising, would it not, were you to provide that assurance without any data at all?---Yes. 11.16AM

Moving to what occurred on 15 February and 16 February in relation to carbon monoxide levels in the southern parts of Morwell, we've heard evidence from Commander Katsikis who was a Deputy Incident Controller over that weekend that on 15 February elevated carbon monoxide levels were detected around the perimeter of the mine and in the southern parts of Morwell, and that, based on those readings, the Incident Controller decided to issue an emergency alert, a watch and act message that was sent out both via text message to people within an 11.16AM 11.17AM

area on the southern side of Morwell and also was posted on the CFA website, and that that message was downgraded later that evening after a wind change.

When did you become aware that that action had been taken?---I was rung around lunchtime on 15 February by one of the health staff in the regional Incident Control Centre, that the Incident Controller was considering issuing an alert based on a single instantaneous reading of elevated carbon monoxide. I asked - - - 11.17AM

That wasn't Commander Katsikis's evidence, there were more than one reading and that was the basis - but that's what you were told, was it?---That's what I was told, yes. I was informed that - I then rang my Manager of Public Health Emergency Management and asked him to convene with my Environmental Health Risk Advisors and to provide a risk assessment on that - well, my understanding was on that single elevated carbon monoxide level. I asked them to provide a risk assessment that would be given to me that we could give to the Incident Controller as to the health implications of this incident. Prior to that being able to be completed, I was then rung back and advised that the watch and act alert had been issued. 11.18AM 11.18AM

Was the risk assessment ever completed?---Yes, it was. 11.18AM

Is that available to provide to the Board?---I believe so, it should be in some of the email documentation which has been provided, yes.

I've not seen it, that's not to say it hasn't been provided, but if it hasn't been I'd be grateful if you could ensure that it is?---Okay. 11.19AM

Did you agree with the Incident Controller's decision to issue a watch and act alert on 15 February?---No, I don't think that was particularly helpful. The risk assessment was that, with this instantaneous reading, which I was informed that the instantaneous reading was 14 ppm, and that was quite close to the edge of the mine. We know that if you stand next to a modern vehicle exhaust or you stand next to your gas stove while you're cooking dinner you can get levels of 5-15 ppm of carbon monoxide. We did not believe that this posed a risk such as that the watch and act alert was justified. 11.19AM 11.19AM

On that afternoon we commenced - - -

Just before you proceed I want to put to you Commander Katsikis's evidence. His evidence, as I recall it from the transcript, was that there were a number of readings. His statement was that at around midday Deputy Incident Controller O'Connell advised him that HAZMAT technicians were recording elevated CO readings within some parts of Morwell. His evidence, as I recall it, was that they were 13 ppm on average, peaking at 20 ppm near the police station. "There was then a meeting of various people involved in the Incident Management Team. At the meeting the scientific advisor, Warren Glover of the CFA, confirmed that CO levels in some parts of Morwell were high", and then there's a reference to the weather conditions and the fact that there was no wind at that stage but there was a wind change expected that afternoon. 11.20AM 11.20AM 11.21AM

That suggests more extensive recordings of high carbon monoxide levels than had been conveyed to you, 11.21AM

does it not?---Yes.

Certainly more than a single spot reading?---Well, that suggests that, if that's his evidence, yes.

Your Department's risk assessment was conducted on the basis of a single spot reading of 13 ppm?---That was my advice at that time. I'll have to check with the team as to whether they did - whether they were aware of other readings, but that was the advice that I had at the time, that it was a single high level. 11.21AM

So you thought that the watch and act message was unhelpful?---I thought it was unhelpful; I thought it sent a very concerning message to the community where that wasn't necessary. 11.22AM

What did you do about your view that it was an unhelpful warning?---In terms of specific - - - 11.22AM

Yes, what steps did you take next?---The steps that we took were to develop, and in conjunction obviously with the Incident Controller, a Carbon Monoxide Protocol which would provide everybody with sound decision-making as to what our advice to the Incident Controller would be with varying levels of carbon monoxide. As I mentioned, single instantaneous high readings are really not a sound basis to make sound decision-making. 11.22AM

So on 16 February my staff developed over that day the draft of the Carbon Monoxide Protocol which had the levels and the actions which would be taken according to levels of carbon monoxide, expected duration of the plume and the location of those levels. That protocol was in place from 16 February. That was subsequently peer reviewed and found to be an appropriate instrument to guide decision-making. 11.23AM 11.23AM

We'll come to the Carbon Monoxide Protocol and the various peer reviews a little later. But that is based on a different standard from the ambient air quality standard set in the National Environment Protection Measures, is it not?---That's right, yes. 11.23AM

It's an Acute Exposure Guide Level 2?---That's right, yes.

Who among your staff worked up this draft protocol?---The staff that were principally involved was our Principal Health Risk Advisor who's an air quality specialist. One of my - - - 11.24AM

Is that Vikki Lynch?---That's Vikki Lynch. One of my Emergency Management staff which was Dr Jane Canestra, who's an emergency physician, and Dr Danny Csutoros, who's the Senior Medical Advisor who's currently working with Environmental Health, and there were other staff as well providing support to that. 11.24AM

The smoky conditions persisted on 16 February, in fact they got a great deal worse on 16 February. The Incident Management Team, Commander Katsikis's evidence was, remained concerned about high carbon monoxide levels in the area of Morwell near the mine. Commander Katsikis's evidence was that there were readings of 20-30 ppm, peaking at 60 ppm. Was there any agreement reached during that afternoon of 16 February about who would be responsible for issuing community warnings about air quality from that point?---The Incident Controller is responsible for all aspects of the incident. I would expect Incident Controllers of any incident, whatever it be, that they seek appropriate health advice before issuing any advice to the community. 11.24AM 11.25AM 11.25AM

As we have discussed earlier on, my role is providing health advice to the community and my role is to provide health advice to the Incident Controller, so it is the Incident Controller's responsibility for overall control of the incident. 11.25AM

Commander Katsikis's evidence was to the effect that there was an agreement reached in the course of that afternoon that responsibility for issuing community warnings would be removed from the Incident Controller and taken over by the Regional Control Centre. Were you involved in that?---No, I wasn't, and the Incident Controller cannot divest himself or herself of responsibility for communications. As I said, we of course provide the best possible advice and support, but the Incident Controller cannot divest himself or herself of responsibility for the incident. 11.26AM 11.26AM

Commander Katsikis also gave evidence that on the afternoon of 16 February, the Sunday, given the high carbon monoxide readings that were being recorded, in the high 20s to the low 30s with a peak reading of 60 ppm, there was discussion about evacuating the southern part of Morwell and that ultimately the Incident Controller had determined to draft a community message rather than move to a full scale evacuation. 11.26AM

The evidence was that the Incident Controller, Mr Brown, and Commander Katsikis were advised by the Regional Controller, Andrew Zammit, that an agreement had been reached in relation to community warnings, "We were then directed that information regarding elevated carbon monoxide levels be passed on from the HAZMAT sector via the scientific advisor to the EPA for data 11.27AM 11.27AM

analysis. The EPA would then provide this information to the Department of Health who would ultimately decide on the appropriate community warning to be issued."

Is that what you understand the agreement was on the afternoon of 16 February?---I wasn't advised of that on the afternoon of the 16th, but I think I've made the comment about Incident Control. If I bring you back to the Carbon Monoxide Protocol which was agreed on 16th February and subsequently peer reviewed as being appropriate, none of the carbon monoxide readings led to decisions - a recommendation from us of evacuation. 11.27AM 11.28AM

If you look at the Carbon Monoxide Protocol it does include, if the level is high enough and expected to persist for long enough, then a recommendation for evacuation would be made, and I would have made that recommendation to the Incident Controller had the levels of carbon monoxide fitted into the protocol where the table says we would recommend evacuation. 11.28AM

Now, we had the discussion yesterday, or Professor Brook and you had the discussion about evacuation and the fact that we in the Department - or me as the Chief Health Officer under the Public Health and Wellbeing Act, I do not have the legal ability to require evacuation - - - 11.28AM 11.29AM

No, the Incident Controller always has the ability to recommend evacuation?---The Incident Controller can recommend evacuation and that's a matter for the Incident Controller and the Emergency Services. So, the point I'm trying to make is that, having agreed on a Carbon Monoxide Protocol, if the levels of carbon 11.29AM

monoxide that we had received fitted into the categories which say evacuate, well, we would not have hesitated to give that advice to the Incident Controller.

You say that the Carbon Monoxide Protocol had been agreed; agreed between whom?---Agreed between our technical team and that had also, my understanding was that there was discussion at the regional level with the Incident Controller, but obviously the technical advice came from my team. 11.29AM 11.30AM

As we will discover when we deal subsequently with the content of the protocol, the minimum level that is set as a trigger is 27 ppm?---That's right.

Which is three times the standard of the level in the ambient air quality standard?---That's right. As we discussed about the ambient air quality standards, they are for a longer-term, they're set for a longer-term period. So the appropriate standards to use in the acute exposure setting such as this are what you've described, the ambient air quality guideline levels. 11.30AM 11.30AM

The ambient air quality standard allows for one exceedance of 9 ppm over an 8-hour period per year, does it not?---Yes, but this was an extraordinary unprecedented event.

As I said, we'll deal separately with the content of the protocol, but it's your evidence that that protocol was agreed between your technical team with some input from the Regional Control Centre?---Well, they were located at the Regional Control Centre; some of them were and some of them were in Melbourne. 11.31AM 11.31AM

And it was in place by the evening of 16 February, was

it?---That's correct.

You were provided with an email chain between Dr Torre and Vikki Lynch, who is the Medical Advisor, or the Advisor, Health Risk Management you referred to?---That's right. 11.32AM

Is it possible that she's been referred to as a toxicologist?---Yes, she may have been referred to as a toxicologist; she's an air quality scientist.

This is an email chain and I just ask you to ignore the first couple on the front page because that's one 11.32AM person forwarding it to another, forwarding it to my instructor. If we start at the earliest which is on the back, the second-last page. There's a request from Ms Lynch to Dr Torre for tonight's air quality issues. There's a need for some data so that there can be a 11.32AM decision about whether the protocol is activated?---That's right.

Dr Torre then provides to Ms Lynch the data that he has available commencing two pages earlier, "The following results." So there's an 8-hour figure provided for the 11.33AM morning at the Morwell South residential area. There were concentrations that morning, averaged, ranged from 25 -45 ppm?---My understanding is that these are short-term, five-minute monitors, they're not - - -

I just want you to read what's there. The first set of data 11.33AM that is given is an 8-hour average of 25-45 ppm, is it not?---Sorry, I don't see where it said 8 hours.

"Continuous CO air monitoring was undertaken at five locations in the Morwell South residential area covering approximately 4 kilometres on 16 February. 11.34AM During on..." and we'll allow for some typographical

errors, and then there's an 8-hour period between 12.30 in the morning and 8.30 in the morning concentrations averaged ranged from 25-45 ppm. Now, that's at a level that's sufficient to trigger the protocol, is it not?---The advice that I had was that these data were - - - 11.34AM

Just attend to my question, Dr Lester. That's at a level that's sufficient to trigger the protocol that was in place by that evening?---It was sufficient to consider the protocol, but the data that we had from here is that my understanding and my advice was that these were individual spot readings, and what we required to trigger the protocol was more than individual spot readings, actually rolling 1-hour averages was what was agreed would be needed to trigger the protocol. 11.34AM

You're given for the morning an 8-hour average, are you not, and then for the afternoon over a 5-hour period there is a range of short-term results that are given from a range of locations in the southern area of Morwell ranging from 7 at the lowest at the police station up to 57 at the highest at the Morwell Bowling Club. These were five minute readings, but it is apparent from that table, is it not, that there were a series of readings taken?---Yes, there are a series of readings taken. 11.35AM

From which an average might have been inferred?---Again, we come back to the data we need for the protocol was not, this data was not in the form that we needed for the protocol, to trigger the protocol.

No, this is the best data that you had available on the evening of the 16th?---That's right. 11.35AM

It is clear that there was more than one reading taken at a number of these locations from that table, is it not?---Yes.

It would have been possible to obtain an average from those readings at those locations?---An average from the individual spot measurements. 11.36AM

Yes, so if we have a range of readings at the Morwell Bowling Club between 25-57, you might want to know when the first reading was taken, when the last reading was taken, what the readings in between were and what they averaged out at?---Again, these were readings that were individual spot readings and were not considered, according to my advice, as suitable for activating the protocol. 11.36AM

But it was the best information available at the time?---Yes, it was. 11.36AM

And you must agree that the readings are at a concerningly high level?---Yes.

There was information available on which to form a view, was there not?---There was information available but not sufficient information in the form we needed to activate the protocol, and the protocol as I've mentioned to you was subsequently peer reviewed as appropriate for - as the appropriate tool for decision-making. 11.37AM 11.37AM

Dr Torre then goes on to deal with the PM 2.5 levels. He advises that the levels recorded at the Morwell East site, which by this time had come online, were measured at 76 µg/m³ at 10 in the morning and at 8 µg/m³ at 2 in the afternoon, and then says that he estimates that levels at the Morwell Bowling Club were two to three 11.37AM

times higher than that, which would put the higher reading, the afternoon reading, above 250 µg/m³?---That's right, yes.

So, more than 10 times the advisory standard?---That's right. 11.38AM

Was this data shared with you before Ms Lynch and her team made a decision about what action to take?---I don't recall whether I was specifically advised about the PM 2.5 levels, but these PM 2.5 levels, as you will see when we discuss the PM 2.5 protocol, would not trigger 11.38AM any different advice from the advice we were giving.

So you don't remember whether this data was shared with you before Ms Lynch made a decision about what action to take?---I certainly remember the - I remember being advised of the carbon monoxide levels and I remember 11.39AM reading Ms Lynch's assessment of those. I don't honestly recall whether I received the PM 2.5 data that evening or not.

There's an email from Ms Lynch at 11 o'clock that night, clearly people were putting in some long hours, it 11.39AM refers to a conversation that she'd had at 9.30. Did you participate in that conversation?---I don't believe I participated in a telephone conversation; I was obviously checking emails all the way through that day and evening. 11.39AM

Her judgment is set out below, that the five minute average values are all below the Acute Exposure Guideline Level 2 for the shortest exposure time for 10 minutes?---Sorry, are we talking about carbon monoxide? 11.40AM

Yes, carbon monoxide, regarding CO measurements, that

section under there?---I'm just not sure where you're - here we are, yes.

You've found it?---Yes.

It's a message to Paul Torre, copied to Chris Webb from Ms Lynch. So she finds that the levels that are recorded, because they were 5-minute average values, were not high enough to trigger the protocol that had been put in place that afternoon?---That's right. 11.40AM

She makes no attempt, does she, to obtain the best possible average over the afternoon that could be obtained from the different readings?---No, her judgment was that these spot readings were not sufficiently reliable information for us to trigger the protocol. 11.40AM

But she doesn't attempt to use the available data to gain an average over the afternoon?---No, as I just come back to the fact that the CO protocol relies on 1-hour rolling averages, not individual spot readings. 11.41AM

Then she deals with the PM 2.5 levels and ultimately the only action that is recommended is a high level smoke advisory?---That's right. Again, those PM 2.5 levels would fit the protocol for issuing the high level smoke advisory. 11.41AM

Well, yes, clearly, but there was no consideration of other action?---Not at that stage, no.

Given the indicative data that was available and what was known about the likely duration of the mine fire?---Vikki has put a note on the end there, "DH will discuss possible media with radio requirements with the Chief Health Officer tomorrow." 11.42AM

If I could tender that email. 11.42AM

#EXHIBIT 47 - Email from Vikki Lynch dated 16 February 2014.

You were copied into this email?---I was.

You may not have read it until the next morning?---No, I certainly read the carbon monoxide - or I must have read the lot because as I realised it's in one e-mail. What I was obviously particularly concerned about was the carbon monoxide advice, but I certainly read this on that evening. 11.42AM

Did you consider the advice to be appropriate?---Yes, I did, I rely on - Ms Lynch is an extremely highly qualified person and I rely very heavily on her advice. 11.43AM

If we can just look at the advice that was issued the following day, there is a high level smoke warning issued on 17 February, there's a Chief Health Officer alert, it's behind tab 18.4 in the first folder?---I think 18 is in my second folder. 11.43AM

It is document DOH.0001.001.0009 for 17 February, so that's the Monday following. Just to confirm, that was the warning that you issued in light of the very high levels of carbon monoxide that had been recorded the previous afternoon and the very high levels of smoke in Morwell?---That's right, yes. 11.44AM

Was there anything more than this that was issued on 17 February?---I'd have to check my media log which is somewhere there in Attachment 18. There was much media activity happening around this time, so I'd have to check that to see exactly what was done on that day. But, as I said, there were many means of communications being undertaken sort of from 11 February. 11.45AM 11.45AM

There's certainly no advice in this Chief Health Officer

alert that people in vulnerable groups should consider leaving the area?---No.

One of those vulnerable groups is children and we had some evidence earlier this week from Mr Pole of the Department of Education about steps that that Department took to address concerns that had been raised by local principals about air quality in schools and difficulties with keeping children confined indefinitely. The Department of Education sought your advice about that, did they not?---That's right, they did. 11.45AM 11.46AM

If we could have on the screen and made available to Dr Lester Attachment 45 to Mr Pole's statement. Mr Pole's evidence, Dr Lester, was that on 18 February, following the State Emergency Management Team meeting, there'd been a discussion between you and the Department's Manager, Emergency Management, at which she reported to you that a report had been received from a children's service of children exhibiting hyperactivity, headaches, flushed faces and longer sleep times. Do you recall that conversation?---Yes, I do. 11.46AM 11.47AM

Mr Pole's evidence, and this was based on what he was told by his Manager, Emergency Management, was that you indicated that these symptoms may be consistent with carbon monoxide exposure?---With general smoke exposure, yes. 11.47AM

Your advice orally at that time was that children's services south of Commercial Road relocate, which would be consistent with your current recommendation, current at that time that people spend some time out of the 11.47AM

smoke?---That's right. In all of the media statements and the fact sheets which you saw were given out at the community meeting which were then available through our website and through the community engagement activities, the advice that people minimise their time in the smoke and take regular breaks out of the smoke was given through all those mediums. 11.48AM

In the discussion I had with the Department of Education officials we agreed that children being in a vulnerable group, we agreed that a good way to enable children to have regular breaks out of the smoke and while they were being educated was to relocate them out to other schools. The Department of Education officials indicated that this was able to be done, so we agreed that that was consistent with our advice to other vulnerable groups in the community, that they minimise their exposure to the smoke. 11.48AM

Why the concern about consistency?---I think we've heard from the community that what they require is consistent - - - 11.49AM

In your mind at the time when you were providing the advice, why were you concerned that your advice to the Department of Education about what should be done with children's services in very smoky areas of Morwell be consistent with your broad public health advice?---Well, I don't think I would want to be giving two sets of inconsistent messages to the public; I don't think that would be helpful. 11.49AM

After this discussion you then wrote to Mr Pole and Ms McKeagney, who I think was the Manager, Emergency Management, and confirmed your advice in writing. That 11.49AM

advice is that, "On the basis that some children from one of your early learning facilities have reported symptoms which would be consistent with smoke exposure and the fact that our recommendation has been for the past couple of days for vulnerable people to spend time out of the smoke if possible, we would advise that your facilities south of Commercial Road, ie nearest to the [mine] are closed and/or have provision for temporary relocation of the children out of the smoke"?---That's right. 11.50AM

The initial step is to close the facility located south of Commercial Road and/or to relocate the facility if that's possible?---That's right.

So the Department of Education were looking to you, were they not, for advice about whether relocating their schools was an appropriate step?---Yes, they were. 11.50AM

You appreciated that they would not move without your advice that it was an appropriate step?---Well, certainly they came to seek my advice on that, yes.

Having provided that advice to the Department of Education on 18 February, did you revisit the content of the advice that you were providing to the community generally?---The advice we were providing to the community generally, as you read on that first fact sheet, included all of those things which were, as I said, were consistent with the advice we were giving about taking regular breaks from the smoke. 11.51AM

Although that didn't appear on the alert that you'd published on 17 February, did it?---But it did appear on all the others - - - 11.51AM

A range of options?---It did appear on all of the other

material that we were using, our community fact sheets et cetera.

But in the alert with the red border that you published on 17 February, there was no mention of the desirability of people in vulnerable groups moving out of the area whilst smoke persisted?---I should mention that the alert - my Chief Health Officer alerts are more directed at health professionals than the community. Our community fact sheets are obviously the ones that are directed primarily at the community. 11.51AM 11.52AM

The alerts are posted on the Department of Health website, are they not?---They are, yes.

And someone browsing the internet looking for advice may well just look at your alert; do you accept that?---They may, yes. 11.52AM

It would be reasonable for that person to expect that advice that you wanted them to receive would be contained in the alert?---Yes, that would be reasonable.

They shouldn't have to go hunting for a community information fact sheet for the detail, should they, Dr Lester?---Well, most people will look at the community information rather than the health professionals' information. 11.52AM

Forgive me, but on your website the alerts are available for anyone to look at, are they not?---Yes, they are, yes. 11.52AM

It's not in a "health professionals only" section of the Department of Health website?---No. No, it's not.

CHAIRMAN: If you're going to move on, while we've got that on the screen, I query if there was further discussion with Pole or further discussion as to schools north of Commercial Road, unless you were going into that area 11.53AM

anyway?

MS RICHARDS: I'll deal with the question of north and south subsequently.

MEMBER PETERING: Ms Richards, may I also seek clarification. On the alert on the community fact sheet there's a 1300 telephone number. So, if I was living in Morwell and I rang that number, what would it tell me on 18 February?---Can you point me to where that is? 11.53AM

MS RICHARDS: There's a subsequent advisory issued on 21 February?---I see the 1300 number on the alert is our Environmental Health Unit at the Department of Health. 11.54AM

MEMBER PETERING: Also on the 14th of the community information which you signed, which is Attachment 7, it encourages the community for more information, page 3, "For more information on the health effects of smoke", contact that number, 1300 761 874 during business hours. So, if it I was a mother with children and I was looking at this community alert on 14 February and I rang that number, what would I be advised?---You would be talking to staff in our Environmental Health Unit, so you would be advised exactly what those messages were that were on the community fact sheet. 11.54AM 11.55AM

Would I be speaking to a person?---Yes, of course you would. 11.55AM

And I'd be directed to go to this fact sheet, would I?---That's right, and in fact we did receive many phone calls and emails.

Apart from going back to this fact sheet, what would I be told?---You would be told the messages that are contained in the fact sheet. 11.55AM

So it's not really more information, this is just repeating this community information sheet?---Well, people may have other individual questions that our staff, if they felt qualified to answer them if that's within their expertise, they would answer them; if that related to a clinical health matter, then they would refer the person on to their own doctor. 11.55AM

Thank you.

MS RICHARDS: There was a further advisory issued by you on 21 February, if we could have a look at that, it's behind tab 18.3 and it's document DOH.0001.001.0008 under "Advisories". This is, as I understand it, the next advisory issued after the one we were looking at dated 17 February which was an alert?---That's right. 11.56AM

There's an identification of the at risk groups, and then under the heading, "Prevention" on the second page, those with heart or lung conditions and people with asthma are advised to take their medication, follow their asthma plan. "Everyone, but particularly those at high risk, is advised to avoid prolonged or heavy physical activity outdoors and keep informed of fire activity, and those with symptoms such as wheezing, chest tightness and difficulty breathing should seek medal advice." Again, there's no suggestion here that people seek a break out of the smoke, find an air-conditioned place to spend time or, if they can, move out of the area until the smoke clears?---That's right. Again, these are more directed at health professionals, so those other messages were included in the information which was more directed at the 11.56AM 11.57AM 11.57AM 11.57AM

community.

The message under "Prevention" is not directed to a health professional, is it, Dr Lester? It's advice that people should take their medication and, if they're experiencing symptoms, see their doctor?---That's the advice that we would expect health professionals to be giving their patients. 11.58AM

By the time they're consulting with their patients, the patient's already seen their doctor?---They're not necessarily seeing the doctor for those conditions, they might be coming in for their monthly check-up or their pap smear or whatever. 11.58AM

But again, this is an advisory that is published on the Department of Health website that is available for anyone who wants to know what the Chief Health Officer's advice is to consult, and it doesn't contain any practical options about minimising exposure to smoke, does it, apart from avoiding prolonged or heavy physical activity outdoors?---Yes. 11.58AM

Can we have a look at the data that you did collect from the EPA which you've provided to us in a graph. The PM 2.5 data is referred to at paragraph 67 and it should be behind tab 14 but it may be behind tab 15 in your folder. This records PM 2.5 readings as a rolling 24-hour average from the time that data started to be provided from the East Morwell site, that's the blue line?---That's right. 11.58AM 11.59AM

And the mobile laboratory at the bowling club down the end of the road here?---That's right.

And that's the red line. Of course, there is an entire week of smoke that's not recorded on this graph?---That's 11.59AM

right.

There is a rough correlation between the levels recorded at the Hourigan Road site and the levels recorded at the bowling club, they tend to peak at about the same time?---That's right. 12.00PM

Although the levels recorded south of Morwell are significantly higher?---That's right.

That was the data that you had available; I take it you didn't have it in this graph form as you went along, you had day-by-day readings?---We were having 12.00PM day-by-day readings, that's right.

Together with weather forecast information?---Yes, the EPA would provide their summary of the forecast information.

And generally speaking a southwesterly wind was likely to 12.00PM result in a peak; did you understand that as you went along?---That's right, yes.

There were periods on 21 and 22 February when the PM 2.5 reading at the bowling club significantly exceeded the 250 µg/m³ trigger level and there was a smaller spike 12.01PM period on 27 and 28 February?---When you say "trigger level", are you referring to the PM 2.5 protocol?

Yes?---The primary objective of the PM 2.5 protocol, you will see, is to prevent vulnerable groups from spending more than three days in a level of more than 250, and 12.01PM that protocol again was peer reviewed as being appropriate for - - -

Can we deal with that in a while, I'd just like to work through the events first and then I'll come back to the protocol?---Sure. 12.02PM

Because the protocol wasn't in place until March I think; is

that correct?---It wasn't signed, it wasn't officially signed until then, but again it was in practical use much, much earlier than that.

Certainly the levels in the south of Morwell exceed right up until 3 March the advisory standard for PM 2.5?---That's right. 12.02PM

The other summary document that gives a picture of carbon monoxide levels is Attachment 10 to your statement. Here we have the blue line is the Morwell East reading, the green line is the Morwell South reading from the mobile laboratory at the bowling club, that commences on, I think, 22 February?---That's right. 12.03PM

Again, we have a gap of more than a week at the beginning, and critically we don't have that very bad weekend of the 15th and 16th recorded?---That's right. 12.03PM

We do see that there were only three periods when carbon monoxide levels at Morwell South exceeded the 9 ppm threshold?---That's right.

Rather than the 27 ppm threshold that the protocol adopts?---That's right. 12.04PM

Again, they coincide with the peak periods roughly, 21st, 22nd and the 27th, 28th of February?---That's right.

On 28 February you changed the advice that you were providing to the community. If we look at tab 18.23, that contains a media release from you dated 28 February. News release, Friday 28 February, and that was accompanied by an information update, I believe it was, that was issued on the same day. It's a community update that was issued on the same day, 28 February. 12.04PM 12.05PM

Your advice changed from advising people in at

risk groups to reduce their exposure to smoke and ash to consider temporary relocation. Why did you change your advice on 28 February?---Over the period preceding that the advice that I was giving through the community fact sheets and through the daily media activity that I was doing was to the community to reduce and if possible avoid their exposure - - - 12.05PM

But my question was, why didn't you change that advice?---Yes, if I could just tell a story about that, if I could. Over that period of time - sorry, I just lost my train of thought - to reduce their exposure to the smoke. The Government opened on 19 February a community respite centre in Moe which we encouraged people to use. If they didn't have any other means of getting out of the smoke, they could go to the community respite centre, there was a free bus there. We were continuing to push that message over that period of time. We were continuing to escalate the emphasis of that message to take regular breaks if they could. There were the government provided respite grants for people to move out of the area, to take short-term breaks out of the area if they could. 12.06PM 12.06PM 12.06PM

In the meantime we were looking at these PM 2.5 levels and we were constructing the PM 2.5 protocol. With the PM 2.5 protocol you will see that, as I mentioned, the primary objective of the PM 2.5 protocol was to avoid vulnerable groups being exposed to PM 2.5 levels over 250 for more than three consecutive days. 12.07PM

Could you just point me to which attachment the PM 2.5 protocol is, the PM 2.5 level is at? 12.07PM

I really don't want to go to the protocol at this stage,

Dr Lester - - -?---Sorry, the levels.

- - - I would like you to answer the question, which was why did you change your advice on 28 February?---The PM 2.5 levels which started to go up on 26 February, so you will see that after coming down significantly they 12.07PM did start to go up on 26 February, I mentioned before in my evidence that it's not just the level of exposure to something, but it's the period of time you spend in that exposure which increases the risk of adverse events occurring. 12.08PM

At this stage, as you heard yesterday from Professor Brook, fortunately we weren't seeing any serious health events through the hospital, through Ambulance Victoria, through NURSE-ON-CALL, so that was a comfort to us. However, on 26 and 27 February I 12.08PM started to see the PM 2.5 levels rise again, and on 27 February I had a specific advice from Commissioner Lapsley that the fire would burn for at least another two weeks. I was concerned by that, that if that level continued on the trajectory that it had on the 26th and 12.08PM 27th, that we would exceed the three days of 250 or more. So I decided on 27 February that I was not willing to let this go on further so that that might be exceeded on the weekend and we really needed to issue that advice. 12.09PM

I discussed that advice on Thursday evening with the whole-of-Government Emergency Committee and that advice was issued on the Friday. As you will see from the actual levels of PM 2.5, in fact they did actually drop on the 28th, so we would not have exceeded what 12.09PM was in the protocol. However, as I said, I was

sufficiently concerned that vulnerable groups had been in the smoke for long enough, and they needed to be more strongly recommended to temporarily relocate rather than the less strong message of, make sure you take regular breaks out of the smoke. 12.09PM

Your advice is only to people in vulnerable groups to consider temporary relocation?---Yes.

It's not that they must evacuate?---No, it's specifically - - -

It's not even a strong recommendation that they should leave, it's just advice that they should consider temporary relocation?---That's right, the - - - 12.10PM

So the next question is, why did you not give that advice in the first week of the fire?---The hazard that we were seeing, we need to give advice which is proportionate to the risk of what we were seeing. If you take the question of evacuation, evacuation presents its own risks. If you dislocate people - - - 12.10PM

Nobody's asking about evacuation at this point?---Well, you did ask me about evaluation. 12.10PM

I'm asking you why you did not give advice to the vulnerable groups to consider temporary relocation in the first week of the fire?---The risk of adverse events happening increases - the longer people are exposed to the smoke, the risk of adverse events increases. The actual level of the smoke, as you've seen from the PM 2.5 graph, varied quite considerably across that time. We needed to give advice which was proportionate to the risk of what we were seeing. 12.11PM

Knowing that the fire was predicted to burn for up to a month?---Yes, that's right. 12.11PM

From the first week of the fire?---But we need to give advice which is proportionate to the risk and we need to give advice which is based on the evidence that we have. The levels may have gone down quite significantly even though the fire was burning, so the risk of an adverse event happening if you're exposed to particulate matter higher than 250 over one day is one thing; if it goes down, the body recovers. So, if you're exposed to further levels, then the risk of an adverse event happening is obviously increased. 12.11PM 12.12PM

At this stage we were carefully monitoring the information we were receiving from the hospital, NURSE-ON-CALL, general practitioners and fortunately we were not seeing any serious health effects which was obviously a great comfort to us. But, as I said, our PM 2.5 protocol which was agreed and peer reviewed that it was appropriate was that advice, strong advice for temporary relocation would be given if there was predicted to be more than 250 for a three-day period. 12.12PM

Is the reason that you didn't provide this advice in the first week of the fire was that you hadn't appreciated that the fire was going to burn for as long as it did?---Well, no; as you've pointed out, that information was discussed at the State Emergency Management Team meeting, but again when we look at the levels of PM 2.5, they fluctuate quite dramatically across the time period. 12.12PM 12.13PM

Yes, although at every point in South Morwell up to the end of the first week in March they're above the advisory standard for PM 2.5, are they not?---They are above the advisory standard but what - - - 12.13PM

In some cases as much as 20 times?---They are above the advisory standard, but the advisory standard is set for a longer-term period in mind; it's set for protection of health over a longer-term period. Perhaps if I could take you - - - 12.13PM

Perhaps it's an advisory standard that we don't have a goal of exceedances per year to be avoided?---That's right, we don't.

Although we do have that goal in relation to PM 10 levels, do we not?---That's right, we do. 12.13PM

Which is five days over a year?---If I may, can I take you to Attachment 13 which was, as well as having the PM 2.5 protocol peer reviewed by an expert toxicology firm, I also consulted with my other State and Territory colleagues, both the Managers of 12.14PM Environmental Health in the other States and Territories and the other Chief Health Officers through the Australian Health Protection Principal Committee. I consulted with them - - -

Between 5 and 7 March?---We consulted with the Environmental 12.14PM Health Managers on the evening of the 27th and later with the Chief Health Officers. I would just take you to Attachment 13 which is the advice we received from the New South Wales Health Department. The second dot point from the bottom, and remember, this was advice 12.14PM that was given on the data that they were given on 27 February, "The advice in the proposed protocol is quite strong. The individual risk from PM is small and unlikely to justify a Government recommendation that vulnerable groups should relocate. Relocation is 12.15PM potentially costly and presents its own health risks."

This was advice that you received on 7 March?---This was advice that was given verbally on 27 February as well.

That is recorded in Attachment 14, is it not?---I don't have an Attachment 14.

It might be Attachment 13. There's minutes of a meeting of the Environmental Health Standing Committee. Might be behind tab 13?---I don't have that in Attachment 13. 12.15PM

Could a copy of that be provided to Dr Lester?---Thank you.

This was the input that you had from this Standing Committee on 27 February when you made your decision to change your advice?---That's right. 12.16PM

The written comments came later?---That's right.

At the end of the first week in March?---That's right.

There is concern expressed at the second dot point that, "Relocating sensitive groups could set an inappropriate precedent." What is the harm in advising people who are living in an intensely smoky area that they should consider temporarily relocating until the smoke clears?---The comment there was related to what our colleagues felt was the level of risk, and the comment that if we gave a very strong recommendation that people relocate, ie almost equivalent to an evacuation, you dislocate people from their surroundings, you dislocate people - - - 12.16PM 12.17PM

Can I just stop you there. Suggesting to people that they consider temporarily relocating is not equivalent to an evacuation, is it?---No, what I'm - - - 12.17PM

By no stretch of the imagination is it equivalent to an evacuation?---No, that's right.

There will not be police knocking on your door saying, "Get out now", will there?---No, not with that advice, no. 12.17PM

Which is what an evacuation involves, does it not?---That's right, yes.

This is advice to the community about what they should do to cope with persistent levels of high smoke, and it's very gentle advice that they should consider temporarily relocating. Why was that advice not given in the first week of the fire?---To be honest, I think I've answered that question. I think I have answered that question, saying we needed to look at the level of risk on a day-by-day basis. We did from the start say to the community, minimise your time in the smoke, take regular breaks from the smoke if you can, and as time went on we tried to emphasise the fact that we were recommending people to take time out of the smoke. So all along we were giving that message to the community. 12.17PM 12.18PM 12.18PM

The advice we were given from the Environmental Health Standing Committee was that they felt that we were being quite conservative and, as I said, you'd have to speak to them as to that view but it was their view that the level of absolute risk was quite small. 12.18PM

In hindsight do you think you should have provided that advice at an earlier stage in the fire, that people in vulnerable groups should consider temporary relocation?---I think that the advice we provided was proportionate to the level of risk and the advice we provided escalated according to the length of time that the vulnerable groups were spending in the smoke up until 27 February when, as I said, I decided to issue that stronger advice, even though according to our protocol it actually turned out to be reasonably conservative. 12.19PM 12.19PM

If I can ask you about the terms of the advice that you provided on 28 February. You've previously identified children as a vulnerable group and your advice to the Department of Education would suggest that includes school-aged children. Why did you limit the advice to preschool-aged children under 5?---The advice to the Department of Education was based on a general discussion on children. Now, the advice that they gave to me on that day was that there was only one early childhood centre in the southern part of Morwell, and that had closed of its own volition. So the advice that I gave to the Department of Education was children generally. Now, we know - - - 12.19PM 12.20PM

You'll appreciate that being the Department of Education they're asking about school-aged children?---No, they're responsible for early childhood education as well. 12.20PM

But they also run state schools?---Yes, they do.

State primary schools, and children are generally aged 5 and over at primary schools, you accept that?---That's right, yes. 12.20PM

And so the advice you are providing to the Department of Education about closure or relocation of their facility related to school-aged children, did it not?---They advised me - we discussed early childhood as well and the advice they gave me on the day was that there was one childcare facility in the southern part of Morwell - - - 12.20PM

Which had already closed?--- - - - and that had already closed. 12.21PM

And so they were seeking your advice about what they should

do with their schools?---With their schools, yes.

Which contains school-aged children?---That's right.

So my question to you was, why was the advice in the 28 February community update limited to children of preschool-age under 5?---Because, as we discussed before, the younger children are, the more vulnerable they are, so in terms of providing advice to the most vulnerable groups, we included children under school age, again knowing that children of school age had already been taken out of the smoke. 12.21PM

Well, their schools had been relocated, but if they were living in the southern part of Morwell - - -?---Yes, they were being relocated.

- - - their families still had to consider whether they should relocate, did they not?---That's right, but what we know is that the children who were most at risk are those of the young age. 12.21PM

Is there any other reason for choosing 5 as the dividing line?---Again, it's a relatively arbitrary line, obviously it's a gradation of risk as you go up, so with the 65 and over it's a reasonable line based on the evidence. 12.22PM

The other arbitrary line in your advice was south of Commercial Road. Why did you choose that as the geographical boundary of your advice?---If you look at the data as we have for the particulate matter from the monitoring station located in Morwell South and here at the bowling club, compared to the monitoring station that was located north of Commercial Road, you will see a really - a large distinction in the levels that were experienced. 12.22PM

Yes, and we're also aware of where those stations are located?---Yes.

And the East Morwell monitoring station is located at a fair distance away from Commercial Road. It's located up where that hand is pointing?---Yes. 12.23PM

Apart from that data, the data from the monitoring station at Hourigan Road, the data from the monitoring station at the bowling club, did you have any other information about the distribution of the smoke across Morwell?---We know that particulate matter falls out 12.23PM quite quickly as you go away from the fire, but those two stations were what was being reported to us from the EPA.

The EPA have given evidence that they were using a travel blanket driving around Morwell. Did they provide that 12.23PM data to you that gives a spatial representation of where the smoke was and was not?---I don't recall that; they may have provided it to some of my staff, I'd need to check that.

But as best you can recall, your selection of that dividing 12.24PM line in Commercial Road was based on the different readings from the bowling club and the Hourigan Road site?---Yes. You can see, as you see clearly from the data, that Morwell South was much more severely affected and you would expect that from the location of 12.24PM the mine. The actual decision about the dividing line was discussed on the morning of the 28th at a meeting where the Latrobe City Council were present and we discussed this very issue about what was an appropriate demarcation point and they were in agreement that 12.24PM Commercial Road was the appropriate demarcation point.

Was that an appropriate demarcation point for eligibility for assistance with relocation?---Well, I can't really comment on that. My advice is based on health advice. The Government subsequently chose to give financial and logistical assistance based on my health advice. My health advice, as I said, I believe was soundly based on the evidence.

There's a diagram that you have provided us at Attachment 20 which will definitely be in the second folder which you refer to at paragraph 88. This is a diagrammatic representation of the smoke impact at Morwell. There's other evidence that the Inquiry's heard that suggests that this diagram does not represent the distribution of smoke in Morwell, it doesn't represent the reality of what people were experiencing and breathing. Is there a scientific basis for this diagram, Dr Lester?---Look, I believe it's a modelling prediction, so it's certainly not something that I relied on in terms of giving my health advice. I relied on the data that we were seeing. 12.25PM 12.25PM 12.25PM 12.26PM

And the only data was the data from those two monitoring sites?---That's right, yes.

We can put this aside as really providing any explanation of the movement of smoke in Morwell?---Yes, it's an indication, that's all. 12.26PM

In fact, the note on the bottom suggests that it was an attempt to explain why the dividing line had been selected?---It's not something that I generated, no.

Who did?---Look, I'm honestly not sure, I think it may have been the CFA but I'm not sure about that. 12.26PM

Your advice was lifted not until 17 March, although the

PM 2.5 levels that were being recorded at both stations significantly reduced from early March?---That's right.

And remained well below the 250 µg/m³ level that had been identified in the protocol as needing to be avoided. Why did you continue to maintain your advice that people temporarily relocate until 17 March given what readings were coming back?---As soon as we issued the temporary relocation advice we drafted a protocol for what I would use to lift that advice. 12.27PM

Is that the document that we see behind tab 21, "Basis for a recommendation by the Chief Health Officer to lift temporary relocation advice"?---That's the title of the document. I'll just find it. Yes, that's that document. 12.27PM

Your trigger level for lifting the advice is significantly lower than your trigger level for providing the advice to temporarily relocate in the first place?---We felt that it wouldn't be helpful if we got people to move back and then the fire flared again, so I was in constant contact with Commissioner Lapsley about his assessment of the status of the fire. 12.28PM 12.28PM

By the time you were satisfied of all of these matters, 17 March, it had been declared controlled for a week?---That's right, it had.

I've been promising you that we'd come to the Carbon Monoxide Protocol for some time now, Dr Lester. You have referred to it at paragraph 55 of your statement and it appears behind tab 8. Your evidence was that this was developed initially on the afternoon of 16 February?---Yes, on the day of 16 February. 12.29PM 12.29PM

In its final form it is dated 27 February?---Yes.

But it was a guide for decision-making for you and the people who advise you from 16 February; is that correct?---That's correct, yes.

Can you explain how it operates, what are the trigger levels and what level triggers what action?---The table there describes - firstly, if I go back to the minimum dataset for decision-making, being the rolling average 1-hour levels, the precise location of the measured levels and the forecast for the next 24 hours. There's then a table as to what would happen when particular levels reach particular - when levels are at a particular level, and then what the predicted duration of the plume is. 12.30PM 12.30PM

Is that at figure 2, that table?---That's right, that's at figure 2 of the protocol, page 3. 12.31PM

We see that the lowest level that will trigger a watch and act message is 27 ppm?---That's right, where the plume was predicted to be more than 8 hours.

That is taken from the Acute Exposure Guide Level 2?---That's right. 12.31PM

Which is developed by the United States Environment Protection Authority?---That's right.

You've mentioned several times that you had this document peer reviewed. It was peer reviewed from some toxicology consultants, Toxikos?---That's correct. 12.32PM

The person who conducted the review within Toxikos was Lyn Denison, I gather, from the information provided inside that document?---That's correct.

Ms Denison is a former employee of the EPA, is she not?---That's correct. 12.32PM

And an environmental scientist?---Yes.

Not medically qualified?---I don't believe so, no.
The EPA has also had - because it was a joint protocol, was it not, this?---Yes.
The EPA also had the protocol peer reviewed by two epidemiologists, Dr Fay Johnston and Professor Ross Anderson, and both of those people express concern about the appropriateness of the levels that are chosen and in particular whether, over a prolonged event such as this one, it's appropriate to use the acute exposure standard; both of them suggest that much lower trigger levels should be included in the protocol. Did the EPA share those peer review documents with you?---Not with me. I'd have to check whether they shared those with my staff, but I was not aware at the time that they'd had the protocol peer reviewed separately. 12.32PM 12.33PM 12.33PM
It's a little strange to me at least that the EPA should engage epidemiologists while the Chief Health Officer should engage an environmental scientist to conduct a peer review of this document?---Well, Lyn Denison is a very well qualified person and that consulting firm is a very highly regarded consulting firm. 12.33PM
But equally, Dr Johnston and Professor Anderson are well respected epidemiologists?---Yes, they are, yes.
Whose views should be considered, and now that the fire is no longer burning and there's an opportunity to refine the protocol, would you accept that it should be reviewed in light of their opinion?---We can certainly review that and take their opinion into account, yes. 12.34PM
Similarly with the PM 2.5 protocol, this you've referred to at paragraph 63 behind tab 11 as Attachment 11. It's dated 13 March and your evidence in your statement is 12.34PM

that development of it started on 25 February?---Yes, that's right.

You had that consultation with your colleagues in other jurisdictions on 27 February?---That's right.

So it was guiding your decision-making on 27 and 28 February?---It was, yes. 12.34PM

The peer review was conducted again by Ms Denison at Toxikos?---That's right.

She provided her feedback on 5 March?---That's right.

And then you finalised it on 13 March?---The signature on it was on 13 March, so it was in use prior to that; it was just a matter of the signature being on it on 13 March. 12.35PM

The EPA's not provided us with any peer review of this document, but it is a joint protocol again?---Yes.

Intended to be. It would be of benefit, would it not, for this document to be reviewed by the same epidemiologists who reviewed the Carbon Monoxide Protocol?---Yes, that may be of benefit. 12.35PM

And so, you would not object to the recommendation that was made by Dr Torre and Ms Richardson that there be, now that we all have time, a fuller review of both of these protocols by an expert panel?---I would welcome that. 12.35PM

One other piece of peer input that you obtained reasonably late in the piece, but it's a very useful document, is the Rapid Health Risk Assessment from Monash, a number of people at Monash in the School of Medicine, Nursing and Health Sciences. Why did you seek this Rapid Health Risk Assessment? It's behind tab 15?---Again, we sought this as another consultation from experts that would help us. Unfortunately, this didn't arrive as quickly as we might have hoped, but we were seeking 12.36PM 12.37PM

to get additional expert opinion into our decision-making.

So by the time it arrived, really, all the critical decisions had been made?---That's correct, yes.

But it is a very thorough review of available evidence?---Yes, it is. 12.37PM

In particular, there is a section starting on page 18 that deals with what is the risk and how does risk change with persisting exposure? In a reasonably confronting table there's some modelling of increased mortality rates that might be expected over successive durations of exposure. We see from that, as we discussed earlier on this morning, that the risk increases with the duration of exposure?---That's right. 12.38PM

So, while at three weeks it's not significant, by the time you get to three months it does become significant?---That's right. They assess this at exposures of PM 2.5 for 250 for the southern part of Morwell, and I think at the standard for the northern part of Morwell. 12.38PM

This assessment was based, as I understand it, on the average of the Victorian population?---The expected deaths would be based on the average Victorian population.

It would have been helpful to have it adjusted for the known demographic of Morwell or the Latrobe Valley, would it not?---Well, the expected death rate - it would be helpful to have it specific for Morwell, but I presume that they used the expected death rate for the whole of Victoria as a more stable measure to compare against. 12.39PM 12.39PM

The last thing I'd like to ask you about, Dr Lester, is the

long-term health study?---Could I perhaps just bring you back to the conclusion on the Rapid Health Risk Assessment?

Certainly?---Was that for exposures of 250 continually in the southern part of Morwell, then no additional deaths would be expected if that continued for six weeks. So, it would be at three months that they would expect to see some increase in deaths. Obviously that's at the very severe end, obviously, of health effects. 12.39PM

And we're dealing with death, and of course there can be a range of health effects short of death that it is desirable to avoid?---Absolutely, but that's the conclusion that this assessment which focused on mortality came to. 12.40PM

The long-term health study. When did you identify a need to undertake a long-term health study?---I think, as the exposure started to progress from beyond just the - you know, your normal bushfire exposure of a few days or a week, we were trawling the evidence for what we might expect from exposures. Obviously my internal experts did a lot of literature reviewing, Dr Lyn Denison from Toxikos provided literature review for us. Obviously the Monash group provided that literature review for us as well as part of the risk assessment. 12.40PM 12.41PM

It was when we were getting beyond that, that standard short-term exposure, that we realised that there really was a bit of a gap in the evidence as to what, if any, long-term health effects might be expected from this event. So we started talking at that time about the fact that we needed to provide assurance to the community and we needed to listen to 12.41PM 12.41PM

community concerns, as well as try and fill that gap in the evidence.

You've identified a number of issues for the study at paragraph 94. At paragraph 95 you say that the proposed duration of the study is 10 years. That seems like a very short duration for a long-term health study. Why only 10 years?---I think it would be ideal if the study - well, I think it would be very ideal if the study continued longer than that. It really is not feasible for the Government to be entering into contracts at this stage for any longer than 10 years. I would certainly be wanting to see the study continue for longer than that. 12.42PM 12.42PM

So the 10-year constraint is imposed by Government tendering rules; is that correct?---Well, it's not a particular rule, but in terms of engaging in Government contracts for a very long period of time for what's likely to be a substantial sum, then I think, and the advice that I've received, is that a 10-year contract is the appropriate upper limit at the moment. As I said, my expectation and hope would be that it would continue for much longer than that. 12.42PM 12.43PM

Of course, if the study were conducted by the Department of Health without being contracted out, there wouldn't be that limitation, would there?---I don't think it would be appropriate for the Department to be conducting - sorry, I don't think it would be appropriate for the study to be conducted by the Department of Health; we don't have the expertise that an external expert research group would have. We really do need to get someone who's got that external research expertise to 12.43PM 12.43PM

do this.

The difficulty I'm having is in understanding why, if you want to conduct a long-term health study, you can't establish a long-term health study. 10 years is not - I mean, in the scheme of things, it's not long enough, is it?---Well, I think I've answered that question. 12.44PM

The constraint is? I just want to be clear about the constraint, because if it's Government tendering rules those might be able to be addressed?---Well, again, I think I've answered that. I think it's, given the substantial nature of this, that it is only reasonable to be contracting initially for a period of 10 years, and then after that, depending on performance et cetera, the decisions of the people at the time, I think it would be more than appropriate or I think it would be very desirable for it to continue for a longer period. 12.44PM

But that decision will not be made until the end of the initial 10-year period, is that - - -?---That's right.

The governance arrangements that are proposed is that the successful tenderer would form the Advisory Committee which would include you?---Myself, that's right. 12.44PM

Could the Department of Health not form the Advisory Committee or Steering Committee to oversee what the successful tenderer does?---Yes, the Department of Health could convene that. 12.45PM

And that may address the duration constraint that you have because of the tendering requirements?---No, it doesn't change the fact that, to enter into an extremely long duration contract would be very unusual. The governance of the Advisory Committee is quite a 12.45PM

separate issue.

There are two separate issues, are there not; there's the decision to undertake a long-term health study for an appropriate duration?---Yes.

And there is the way in which that study is carried out?---Yes. 12.45PM

To allow the contracting rules to determine the duration of the study is, I suggest, the tail wagging the dog?---It hasn't - there's been nothing in there which says the study will go for 10 years and stop. The intention would be that the study would continue. 12.46PM

Your statement at paragraph 95 says, "The proposed duration of the study is 10 years"?---That is because that's written for the tenderer so they know what contract they will be entering into. 12.46PM

But, if the Department of Health decides that it wants to conduct a study for 20 or 30 years, it can make that decision and then let contracts as required to implement that decision, can it not?---Perhaps we should change the wording to, "We would like to see a long-term health study of 20 years or more but the initial contract will be set for a period of 10 years ", so perhaps that might be helpful? 12.46PM

Yes, rather than having the contracting rules determine the duration of the study?---We can certainly look at that. 12.46PM

I have no further questions for Dr Lester at this time. Do Members of the Board have any questions?

MEMBER CATFORD: Thank you very much, Dr Lester, I realise it's been a very long morning for you, I just have a few questions which I'm sure you won't have too much difficulty with. You are at State level in essence the 12.47PM

champion of the people's health in Victoria?---That's right, yes.

Do you think, thinking back to your days as a medical officer, there ought to actually be someone who is championing the health of Latrobe Valley in a supportive role to, I suppose, your role? But should there be someone who thinks and feels and communicates about the health of the people of Latrobe Valley?---Just to comment on your first point, Professor Catford, I take my responsibilities extremely seriously as the champion of the health of the people of Victoria. 12.47PM 12.47PM

The Department is run on quite a centralised model, as you heard Professor Brook say yesterday, but we do have health officers in each of the eight departmental regions, so we have staff in the region for the very purpose of them understanding what the particular health issues of the community are. 12.48PM

So although there is not a whole team of people who would have the expertise, the epidemiological expertise and the public health medical expertise sitting in the region, we do have our staff in the region who are able to advocate for the health of the people in the region, whatever region it might be, be it Latrobe Valley or anywhere else, and provide us with the information that we need to address those health risks. As I said, we do have the more technical expertise centralised in the Lonsdale Street office. 12.48PM 12.48PM

I suppose the point here is, I'm not sure the Latrobe Valley community would know who that person was or necessarily feel able to speak to that person or communicate with 12.49PM

that person about their health concerns and potentially get some answers. Would that be fair?---A couple of things about that. I receive a lot of emails through my Chief Health Officer email box from members of the public asking about their health, and I always respond to each of those. You've seen in the information that our Environmental Health Unit has a 1300 number and my staff will always speak individually to people who ring enquiring about their health, and of course the other units such as communicable diseases and immunisation have exactly the same set up so people can ring and ask specific questions of the staff. 12.49PM 12.49PM

I absolutely accept that and it's a very good service. I'm really thinking about, you know, who is worrying about the health of the Latrobe Valley? Who is their advocate for improvements in health and well-being? How is that localised in a way that people would have trust and confidence there is someone looking out for their best interests?---Well, I'm certainly concerned about the health of the people of the Latrobe Valley, but I don't live there, I live in Melbourne. As well as the departmental office that I've mentioned, of course the health professionals serving the people of Latrobe Valley, so the general practitioners, the community Health Centre, the local hospital, I would expect them to be the champions of the health of the people of the Latrobe Valley, and anything that we were not able to detect through our regular surveillance systems, both our surveillance systems for non-communicable disease, our surveillance systems for communicable disease, all of our other surveillance 12.50PM 12.50PM 12.50PM

systems, if there things which were happening which we were not detecting, well, I would expect that the local health service providers would be the champions of their health.

The general practitioners have currently what's known as - it's not just the general practitioners, it's all primary health services - are coordinated through Medicare Locals, so if there is a voice to come back to us it would obviously be ideal if that was through Medicare Locals, but of course if individual medical practitioners bring anything to my attention or to my staff's attention, then we would certainly take that very seriously. 12.51PM 12.51PM

Just finally on this point, do you think that champion exists at the moment and is it a function that's being performed well?---I think that our staff in the regional office are very competent and have got very good networks with the local health providers. So, although I can't personally identify a particular champion amongst the local health providers, which is not surprising given that I deal Statewide, I suppose I can't really answer that question but I have great confidence in the staff in the Department's regional office. 12.51PM 12.52PM

Thank you very much. We heard yesterday or we introduced into evidence a booklet produced by the Californian authorities which is exhibit 37. I don't know if you're familiar with this, but it seems to me quite a useful resource for public health officials, for the community, for agencies. I just wondered whether you feel something like this could be helpful for the 12.52PM 12.52PM

future in providing more information essentially to people about how to manage the consequences of bushfires and potentially coal mine fires?---I'm aware of this document. I haven't read it in detail. I was advised by my staff that this document provided the basis for our Bushfire Smoke and Your Health joint protocol with the EPA, but I'm not aware personally of the details in this. 12.53PM

I suppose the point is really, do you think there's a need for more fuller information for the public and for medical practitioners and others looking towards the future? I mean, the whole purpose of this Inquiry of course is to learn and to build greater capacity for the future. Do you think we could improve our resources in that sort of way?---Look, I think we could improve our information and the awareness of medical practitioners about the health effects of smoke. I think, as the evidence has increased over the past five or six years particularly about PM 2.5, I think people are now becoming more aware of the health effects of PM 2.5 and the seriousness with which we take our air quality standards. I think that that's perhaps something that the local general practitioner doesn't appreciate as well as he or she might, so that's something we should take on board and make sure that we do communicate that as we go forward. 12.53PM 12.54PM 12.54PM

Thank you. One of the things that came out yesterday was about the need for rapid air monitoring to assist you and your colleagues. It would be interesting to know what you feel about that. Clearly there is a gap in the current system and part of the difficulties you 12.54PM

faced was not actually having access to indicative information very early on in this process. Would you welcome an enhanced service of that sort?---Absolutely. We would welcome much more definitive data as early as possible in an incident. As we said, we rely on the 12.54PM data and the evidence to inform our decision-making, so the sooner we can get definitive data, the better, the better advice we're able to give to the community.

In some ways one could also look at this in terms of, what is the situation now and perhaps a look back, but also 12.55PM some projections or modelling capacity about where these smoke plumes could hit, what the concentration of the particulates could be, very much in the way that I think we were impressed with the CFA's capacity in terms of predicting bushfire spread. Would this be 12.55PM another tool basically that could help you if you had better predictive information?---The event that we've just seen was, as other witnesses have said, was really unprecedented. We haven't had an incident like this where a coal mine fire has burnt adjacent to a 12.55PM community, so this was really something which was really unpredictable. I think predicting the next major incident, you know, it would be wonderful if we had no more major incidents, I think that's very difficult. 12.56PM

The initial discussions we've had with the EPA in terms of how we can improve going forward, we have the Bushfire Smoke and Your Health Protocol, and we've been working with the EPA in recent years on planned burns and information about protection of health from planned 12.56PM burns. We thought that we should maybe expand the

Bushfire Smoke and Your Health Protocol into a more encompassing protocol which has several chapters, so bushfire smoke, planned burn smoke, smoke from perhaps chemical fires as well as smoke from coal fires so that we have an existing agreed set of protocols prior to any of those particular incidents. 12.56PM

One of, of course, the difficulties that we face with this episode was that people were living so close to this open coal mine. Do you think people are living too close here in Morwell to the mine and do you have a view about appropriate buffer zones?---I don't have a view on that. I just come back to the fact that this was really unprecedented, something I don't think could possibly have been foreseen or wasn't foreseen that this was such a large fire which would burn for such a long time at such intensity next to a town. But the answer is, no, I don't have any pre-formed views about buffer zones. 12.57PM 12.57PM

Is this something that perhaps we should be thinking about, I mean not least for places where vulnerable people might congregate, whether it's early learning centres or aged care homes, should they be so close to an open coal mine?---I think it's something it would be very well worth giving some thought to. 12.57PM

This has been an enormous learning experience for everybody, not least you and your team, and obviously in a situation like this you're using your very best resources and all your professional expertise, but we're all learning from this process, and that of course is why we have the Inquiry. What are the particular things that you will be thinking about now 12.58PM 12.58PM

moving forwards in terms of managing an event like this or other events that might have some similarities in terms of smoke or the long-term impact or engaging more effectively with communities? Are there particular things that are high on your sort of action list?---Communication is a big issue, that's something which has been extensively discussed. We had, as you will see from my witness statement, the various sorts of communication activities which we undertook which we felt we engaged a large variety of means of communication. 12.58PM 12.59PM

The community has fed back to us that some people did not hear the messages, some people did not understand the messages, so we need to go back and do a thorough review of our communication strategy, and we obviously welcome this Inquiry as to informing that as to how we can best tailor the messages to the community. 12.59PM

It's obviously a very challenging situation in a crisis situation with a community that has seen problems in the past and perhaps will be more distrustful of agencies as we've heard in the evidence, so taking that extra mile, that extra step to engage. Particularly in the engagement activities, are there more things that we could be doing to engage more effectively with communities like Latrobe, Morwell?---I think, as Professor Brook said yesterday, it's very important that communication be done through local channels and the community engagement be done through the local levels, and identifying local community champions better is something I think we need to think about, and 12.59PM 01.00PM 01.00PM

making sure as far as possible that those local people on the ground are interpreting and delivering the message as consistently and as accurately as they can.

So particularly in the Health sector, we have such people in the form of doctors and nurses and pharmacists and others who are very locally engaged on a day-to-day basis that could form a very good resource for you and your colleagues in terms of keeping the public informed and building their confidence in the measures you might be advising?---Yes, that's right. 01.00PM 01.01PM

Thank you very much.

DR WILSON: If the Board pleases, I have some questions of the doctor, but in view of the time, is it more convenient to commence those after we resumes? I estimate it will take something in the vicinity of 15 minutes. 01.01PM

CHAIRMAN: I'll let you decide whether we have an hour from when you finish or whether you prefer to stop now?

DR WILSON: For what it's worth, we have no questions of Professor Campbell, and a community witness may not be terribly long, so if that helps in the planning of the afternoon, we offer that. Personally, I'd like to commence after, if that suits. 01.01PM

CHAIRMAN: We'll resume at 2.

DR WILSON: Thank you. 01.02PM

<(THE WITNESS WITHDREW).

LUNCHEON ADJOURNMENT

UPON RESUMING AT 2.00 P.M.:

<ROSEMARY ANN LESTER, recalled:

<CROSS-EXAMINED BY DR WILSON:

Dr Lester, this morning you gave evidence about the concept of evacuation in two different contexts; the first, how different it is to a relocation advice and the second in the context of carbon monoxide. Do you recall giving evidence along those lines?---Yes, I do. 02.02PM

Assuming for the moment, as was the fact, you were on the relevant time the Chief Health Officer and not Incident Controller, in the context of evacuation is it correct that, if you thought circumstances might even go near the concept, you advise the IC; is that right?---That's correct, yes. 02.02PM

And, no matter how strongly you may have expressed your views, ultimately the decision to order an evacuation was the decision of the Incident Controller?---That's correct. 02.03PM

At the risk of stating the self-evident, the decision to make an evacuation order is one not made lightly because the process of evacuation carries with it an array of its own risks?---That's right, yes. 02.03PM

Can you itemise a few of them for us?---As soon as you take people, particularly vulnerable people, out of their known and trusted environment, you remove them from their regular healthcare facility, you may be putting them in quite substandard accommodation. If it's a very large-scale evacuation, they may have to be in quite substandard accommodation perhaps with inadequate hygiene facilities, the best that could be provided of course, but not to the standard that people are used to 02.03PM

in their own home, so that carries quite significant risks. So any advice that I might give or any decision from an Incident Controller would have to very carefully balance the risks of the evacuation against the risks of not evacuating and make sure that that advice or decision was proportionate to the risks involved. 02.04PM

If your recommendation or even advice in respect of evacuation has a connection with carbon monoxide, I presume you consult and are bound by the terms of the protocol relating to carbon monoxide before you do anything in the nature of a recommendation about evacuation?---That's right. It's very important to have a structured protocol so that decisions can be based on sound evidence and sound evidence that's been agreed on prior to that decision being made, so that's very important. 02.04PM

You were asked this morning about tab 5, page 22, would you mind going to that, please. Do you have that in front of you?---I do. 02.05PM

What's the correct title for that document?---This is a High Level Bushfire Smoke Advisory template.

You were asked this morning about the things that it said, the things that it doesn't say, and it was suggested to you that there are noticeable gaps in the things that it may not say. Do you recall being questioned along those lines?---Yes, I do. 02.05PM

In other evidence before this Inquiry we've heard that you gave an array of TV interviews, radio interviews, you addressed public meetings and you personally replied to emails, you've just told us about that today?---Yes. 02.06PM

Insofar as the information you gave to the community is not recorded in the document that's presently in front of you, can you tell us how much broader you went in the information that you gave to the community?---Yes. You just mentioned the press conferences, so I did 21 face-to-face press conferences over the period of the fire. I did on top of that countless individual media interviews with radio, television, the local paper, the Latrobe Valley Express. As well as that, the dissemination of information occurred through the local community engagement channels that we've spoken about, so the Country Fire Authority engaged in mobile community buses, there were the community meetings that you spoke about. 02.06PM 02.06PM

On 21 February, having listened to the concerns of the community which were particularly expressed at that meeting on 18 February, the Department opened the Community Health Assessment Centre and that was here in Morwell. This was designed to provide basic health assessment and particularly health advice to residents in Morwell who were concerned about their health. We felt that this was an ideal way to be able to, not only reassure people about their health or refer them on for appropriate further assessment if that was required, but to provide that one-on-one community engagement where members of the community could have their concerns addressed and all of the information that we produced, all of the community information was available to them through those means. 02.06PM 02.07PM 02.07PM

There were other means of communication which have been detailed, social media was used, all of this was 02.07PM

coordinated through a whole-of-Government co-ordination process. There were paid full page advertisements in the Latrobe Valley Express, there were paid radio advertisements, so all of those sorts of communication mechanisms were outlined or were undertaken beginning 11 February. 02.08PM

And ending when?---Ending when? It was right through to after the relocation advice was lifted.

If you can distil the message that you most repeatedly gave, what was it, in those forms that you've just told us about?---Smoke is bad for your health, smoke has health effects, and avoid the smoke as much as possible; stay out of the smoke, ideally take breaks away from the smoke. 02.08PM

You were reaching for a document and you wanted to go to one when you were giving your evidence about this point this morning; what document did you want to take us to?---I think you're referring to the document, the Interim Report on Health Effects; that was a distillation from the data we received from the various health services around Morwell and that is at Attachment 16. It's called, "Hazelwood Coal Mine Fire, February to March, assessment of short-term health impacts in Morwell and the Latrobe Valley, interim report." 02.08PM 02.09PM 02.09PM

What did you want to say about that which you were prevented from saying?---The point that I wanted to make about this document was that we took very seriously information that we were seeking from the community, from community health providers about what exactly were we seeing in the community. When we're basing serious 02.09PM

decisions, we're obviously assessing what we know the risks are, but we need to make sure we're aware of actually what's happening in the community.

You heard Professor Brook yesterday explain the process that we went through to obtain data from 02.09PM general practice, from NURSE-ON-CALL, from Ambulance Victoria, the Latrobe Regional Hospital and of course from our own Community Health Assessment Centre. We were monitoring daily any evidence of severe health effects that we might be seeing that would obviously 02.10PM influence our decision-making.

The comforting thing about this is that we did not fortunately see any severe health effects in terms of increased presentations to hospital, increases in ambulance call-outs. 02.10PM

The discussion yesterday on this was that this was a health service utilisation report and not a health impact report. Yes, the data in this is a health service utilisation report, but it's also the mechanism by which we assess what health impacts have occurred. 02.10PM If I could give you an example of, say, influenza. How we assess the health impacts of influenza in any particular influenza season, so any normal influenza season; we collect data through a sample of hospitals, so what we sentinel hospitals, we collect data on 02.11PM positive laboratory tests for influenza which are obviously at the severe send of - people with more severe disease will have laboratory tests, and we collect data through a sample of general practitioners, so again we call them the sentinel general 02.11PM practitioners. From that we can compare year-on-year

whether we're seeing severe effects from influenza, so is it a bad year, or are we seeing less severe effects. So, although the data is collected at a health service delivery level, it is what we use to tell us about the health impacts. 02.11PM

The other point which was discussed yesterday was, of course this does not take account of those lower level, if I put it that way, very distressing symptoms which are due to the smoke irritation, so effects on eyes, nose, breathing, making things very uncomfortable. 02.11PM Yes, of course it does not take account of that and we absolutely acknowledge that the community suffered some very distressing symptoms such as those.

But as Chief Health Officer I have to focus my energy on the serious effects, so just as influenza, there will be many people who contract influenza during the influenza season, feel pretty terrible for a week but don't need to seek medical attention. 02.12PM That doesn't come to our attention; we need to concentrate serious decisions on the more serious end of the health spectrum, so that's what we did in this report, we were looking for serious health effects and fortunately we didn't see those, but that's not to discount the level of very distressing symptoms that the community did 02.12PM experience.

Is that all you want to say on that issue?---Yes.

Thank you. Either in your witness statement or this morning, forgive me I can't point to where you've told us that you were assessing events from the health 02.13PM perspective on a day-to-day basis on and from the 11th;

have I got your evidence right in that regard?---I'm not quite sure what you're asking.

You were watching the physical event unfold and making decisions based on the fire, its escalation or its recession on a day-to-day basis?---That's right, yes. 02.13PM

You're a person of enormous professional qualification and veneration; in your opinion is that a reasonable approach?---I think that's a very reasonable approach.

If you had been told on the first week that you had arrived on this scene that the fire would last for a month, 02.13PM that it would generate seriously hazardous fumes, over a period of one month over 1,000 people would try, in vain, to extinguish that fire, what in that first week would your health message have been?---That smoke has effects on your health and you should minimise your 02.14PM exposure to the smoke as much as possible.

Sounds awfully like the message you gave?---Yes, I believe that's the message we gave.

Is it correct to say that each day or at least regularly the composition of the smoke altered in some respect or 02.14PM another?---When we were - well, you've heard the evidence from the Environment Protection Authority about the data that they were able to provide. We're not able to distinguish particularly in that first week - as I've said, we didn't have specific data 02.14PM during that first week to know exactly what prominence the bushfires were having as opposed to the smoke from the coal mine. But nevertheless, the message is the same, so whether it's bushfire smoke or whether it's coal mine fire smoke, the message remains the same, 02.15PM that people should minimise their exposure if they can.

By the 28th you saw that this community had endured for some time in these conditions; correct?---Correct.

Mr Lapsley was projecting to you that the conditions would go on for some time?---That's correct.

You by that stage had a sophisticated understanding of the community which made up the inhabitants of Morwell and the surrounding area?---That's correct. 02.15PM

And even so in the period between the time that you first became involved on the 8th and the 28th, there were times where wind changes abated the conditions periodically; is that right?---That's right. The graph that we looked at in terms of PM 2.5 levels was a 24-hour average graph, so on that you saw how the levels fluctuated quite dramatically. What that does hide, of course, is that within a 24-hour time period there were times when obviously the wind change was favourable and the air quality improved dramatically. 02.15PM 02.16PM

In that period between the 11th and the 28th is it fair to say that the composition of the smoke changed?---The composition of the smoke - I'm not quite sure what you're referring to. 02.16PM

I mean the composition or the ingredients of the smoke?---Well, the ingredients of the smoke that we know are particulate matter, PM 2.5, PM 10, carbon monoxide, so those sorts of things that we were measuring, those were what we knew about. 02.16PM

CHAIRMAN: Dr Torre spoke about one or more occasions when he was conscious of the smoke being much more dense, I don't know whether that's what Dr Wilson's getting to, but were you aware of the fact that there were ocassions when the smoke was less dense or more dense 02.17PM

and that would have affected your assessment of the overall position?---Yes, certainly I'm aware that the smoke was much more dense at times and that obviously correlates with those very high peaks of particulate matter that we saw, they would occur at the times when the smoke was very much more dense. 02.17PM

Does that tend to be on occasions when the wind was coming from the southwest?---That's right, yes.

MEMBER CATFORD: Just to follow this line of thinking. You just commented on the 24-hour average reading when things could be very much lower and very much higher, and we heard from yesterday that potentially there were peaks of 1,300 in terms of short acting. The PM 2.5 protocol doesn't actually give any trigger points for shorter durations, whereas your Bushfire Protocol does for PM 10 where there's a PM 10, 1-hour trigger point. Was that something that you thought about including in the protocol?---Well, the Bushfire Smoke Protocol is really there for short-term events, it's there for predictive purposes, so it's mainly used for prediction for issuing a media release clearly for the next day or for that if we issue it in the morning for that evening, so that's more for predictive purposes. 02.17PM 02.18PM 02.18PM

The PM 2.5 protocol was developed specifically for this situation, because we were sort of out of the just short-term, this is what it's going to be tomorrow, we were out of that situation and we were into quite a unique situation, so that's why we developed the PM 2.5 protocol. But knowing the basis of what the risk is, really very high instantaneous peaks are not nearly as significant for our decision-making as a 24-hour 02.18PM 02.19PM

rolling average, so that's why we requested the 24-hour rolling average to assist our decision-making around PM 2.5.

Just a quick follow up. But for a vulnerable population group like people with asthma, wouldn't high levels of PM 2.5 be quite deleterious to their health, albeit only for a few hours?---The PM 2.5 protocol was designed with protection of the vulnerable groups in mind. So we believe and, as I said, we received peer review that that was appropriate, we believed that was appropriately protecting those vulnerable groups. 02.19PM 02.19PM

DR WILSON: Realising that you had no power yourself to order an evacuation, and realising how the rolling averages in the lead-up to 28 February were, as the statistics show, is it still your evidence that the relocation advice was appropriate in all the circumstances?---Yes, I do believe it was appropriate in the circumstances. 02.20PM

You were asked about the information you received from South Morwell earlier in the events with which we are concerned; you recall being questioned about that?---Yes, I do. 02.20PM

Did the fact that the information, coming as it did from South Morwell, cause you to question its reliability in that it came from a specific place in particular?---The information early on in the event which we spoke - which I was questioned on this morning, this comes back to the reliability of the data and the format in which we were getting the data. As I mentioned, the format or what we really required for decision-making was more than just individual spot readings and readings where 02.20PM 02.20PM

we didn't know the location or the actual validation of that reading. What we needed for decision-making against our protocol was a more substantial and validated set of data.

Again, possibly to state the obvious, but the further away from the mine the less risk caused by the particulates?---Yes, that's correct. 02.21PM

It was put to you, and I hope I'm not being unkind, that you had no meaningful information about what was happening in the community in or around the 13th. Do you recall questions along those lines?---Yes, I do. 02.21PM

Would you mind going to paragraph 52 of your witness statement. There you speak of events from 13 February 2014 and in particular the work being done by the CFA in conducting air quality monitoring for carbon monoxide in Morwell. Do you see that?---Yes, I do. 02.22PM

No doubt, you placed reliance upon that information?---That's right, and this was referred to this morning about the fact sheet for 14 February, so yes, that's the correct date. 02.22PM

Would you go to the document behind tab 7, please. Again, how do you describe this document that you've signed personally as approving it?---This was information that we wanted to put together to give the community in that first week of the fire - - - 02.22PM

What do you call this document?---We call it a community information sheet.

You were asked what a person might be told if the caller rang one of the 1300 numbers; you recall being questioned about that. One of the options on page 3 of that document is to ring NURSE-ON-CALL; do you see 02.23PM

that?---Yes.

Are we to understand the effect of this document to be that, if a person had a specific health issue, rather than ringing a number that might provide untargeted generic information or provide generic untargeted advice, that document invited the caller to specifically ring NURSE-ON-CALL and convey the specific health problem that might have presented itself?---That's correct. NURSE-ON-CALL is the on-call health advice which is conducted by an external company on behalf of the Department, so it provides, as the name suggests, constant health advice for people who ring and it's authoritative, its content is known and trusted. So, for people ringing NURSE-ON-CALL, every time we have an issue, all of our information is given to NURSE-ON-CALL so that they can authoritatively give the same information as the information we're giving in all our other material. 02.23PM 02.23PM 02.24PM

It was put to you that the carbon monoxide protocol was not signed until a date in March. Do you recall being questioned about that?---Yes, I do. 02.24PM

You answered by saying that it was being practically applied before that date?---That's right.

From what date was it being practically applied?---From 16 February. 02.24PM

You were asked about the watch and act, and as best I recall you told us this morning that it sent a concerning message or a message that you regarded as being concerning; do you recall that?---Yes, I do.

Why do you tell us that it conveyed a concerning message?---At that stage in our opinion the levels of 02.24PM

carbon monoxide in the community were not of concern. The fact that the Incident Controller sent out a message saying, watch and act, this is concerning, was conflicting obviously with the message we were trying to convey, that in respect of carbon monoxide we were not seeing levels of concern in the community, so we felt that was not helpful for the public who were trying to understand what is quite a complex issue. 02.25PM

You told us this morning about the Carbon Monoxide Protocol and that it was subjected to peer review. Have I understood you correctly when you said that, New South Wales in effect described it as being overly cautious?---That was actually the PM 2.5 protocol. 02.25PM

Pardon me. You did internal investigations about it and received advice in respect of it, or have I got that confused with the Carbon Monoxide Protocol?---The PM 2.5 protocol? 02.25PM

Yes?---Obviously our internal experts developed that in consultation with the EPA, then we subsequently had that peer reviewed, as well as having it consulted with the other Environmental Health Departments in the other States and Territories. 02.26PM

So, what advice were you getting from New South Wales on that?---The advice from New South Wales on that was, the last step, which was recommending temporary relocation, they felt was overly cautious. 02.26PM

And notwithstanding, you proceeded with the giving of effect to this particular protocol?---That's right. I proceeded notwithstanding that advice.

You were asked about long-term studies just before lunch. May I invite you to speculate, and I know we don't like 02.26PM

speculation in courts and boards, but assuming in the next 10 years you detect trends from reliable data that is connected to this incident, what will you do?---Obviously we would hope that we don't detect any trends from this, but, if we do, part of the purpose of this study is to ensure that we have appropriate health services and support to ensure that anyone who may be affected by this has those adequate health services and support. 02.27PM

Various community witnesses have told us about conflicting information that they've received about the smoke and its contents - just accept that we've heard that evidence. Is it your view that the information that you were giving was conflicting?---No, my view is that the message we were giving from the start was that smoke is bad for your health, minimise your exposure to smoke if at all possible. 02.27PM

Naturally, you can't control all discussions in the community about the smoke, what it contains, how widespread it is and such like, but is it fair to say that you were striving to maintain a consistent, factually accurate message that you gave in such things as the fact sheet, media appearances, on your website and on such other information that reached the community or was available to the community?---That's correct, yes. 02.28PM

Consistency of message and accuracy?---Is extremely important.

Along with a message that's capable of being understood by everyone?---That's correct, yes. 02.28PM

You were asked about the events that triggered the CO

protocol in the context of an 8-hour reading this morning; do you recall being questioned about that?---Yes, I do.

As best I've recorded, you said that the information in the 8-hour reading may have triggered a consideration of the protocol; is that right?---That's correct, yes. 02.28PM

You received an email from Vikki Lynch which has become exhibit 47; do you recall that?---That's correct.

May I just read a passage of it and invite your comment. Vikki writes to you, "I understand there are some issues to resolve in relation to the averaging of 5-minute data to 1-hour averages. However, based on this information I do not see any additional advice as required, that is tonight, for CO levels in smoke beyond the high smoke advisory media release put out this morning." You read that of course?---That's correct, yes. 02.29PM 02.29PM

No doubt, you have enormous confidence in Vikki?---I do have enormous confidence in Vikki.

Do you understand that the information that was referred to a few lines up against the words "AEG L2" is a reference to acute exposure guide level?---Yes, guideline level, yes. 02.29PM

And that information is derived from the Guide For Emergency Services, Protective Action document?---Yes, it comes from the USEPA and is currently being used in the protective action guide for Emergency Services. 02.30PM

You regarded that as an unimpeachable source of information on these matters?---Yes, a very authoritative source of information. 02.30PM

The readings referred to, according to Vikki, or at least

your distillation of the information, didn't reach the trigger levels that were referred to in the protocol; is that right?---That's correct.

That had the effect that the protocol was correctly applied, thereby meaning that no warning was necessary?---That's correct. 02.30PM

Thank you, if the Board pleases. Thank you, Dr Lester.

<RE-EXAMINED BY MS RICHARDS:

Dr Lester, just a couple of questions in re-examination.

Dr Wilson took you to paragraph 52 of your statement where you refer to your knowledge that the CFA and the EPA were using handheld monitors, although you don't state in that paragraph what you understood the readings to be?---No, that's right. 02.31PM

For completeness, it was Dr Torre's evidence - in paragraph 23 of his statement - that EPA, carbon monoxide monitoring rounds commenced on 13 February, including schools, childcare centres, aged care facilities, but no significant readings were obtained on 13 February. Could it have been that information that you based the 14 February community information sheet on?---Yes, because as we discussed this morning, there was a statement in the 14th - in the community information sheet on the 14th, so yes, it would have been based on - as I've explained in paragraph 52, that information was based on the CFA handheld monitors. 02.31PM 02.32PM

You say in paragraph 52 that you're aware that monitoring was taking place, but you don't disclose any awareness of the outcome of that monitoring in paragraph 52. But for completeness, to complete the picture, Dr Torre told us in his second statement that the results did 02.32PM

not reveal any significant readings on 13 February?---I'm sure that's correct, if Dr Torre said that.

But those were spot readings, were they not, on 13 February?---That's my understanding, yes. 02.32PM

You were prepared to accept that as a reliable basis for advising the community that there was no cause for concern about carbon monoxide in that 14 February community information sheet?---That was based on the information that we had at the time, yes. 02.33PM

Which were spot readings at various points?---Yes, that's right.

It was not the best quality 8-hour average carbon monoxide data that you later had access to, was it?---No, it wasn't. But again, I should emphasise that carbon 02.33PM monoxide is most likely to be a concern in confined spaces and very close to the mine. We wouldn't have expected in the community setting that would be a concern; of course, we wanted to ensure that, but carbon monoxide does dissipate very quickly in the 02.33PM community setting.

But you were prepared to provide quite definitive advice to the community based on spot readings taken on 13 February, were you not, that showed no readings of significance?---We said in our fact sheet that there 02.33PM were no readings of concern at that stage.

And yet, when there were spot readings that were of concern on 16 February, that was not considered to be a reliable basis for action by you?---The spot readings that were considered on 16 February were considered 02.34PM very carefully by my staff in consultation with

Dr Torre from the EPA, and it was agreed that they did not meet the protocol for action.

Just before we leave that episode on 16 February, the 8-hour reading that was provided from that morning ranged between 25-45 ppm, did it not?---Yes. 02.34PM

In the Carbon Monoxide Protocol that you were just discussing with Dr Wilson, one of the points at which further action will be considered is if there is a reading of 27 ppm over an 8-hour period?---That's correct. 02.35PM

Based on that data, that level was exceeded on the morning of 16 February, was it not?---These were spot readings, these were not hourly rolling definitive readings.

That's not what Dr Torre says in his email. He gives an 8-hour average for the Sunday morning?---The advice that I had were that these were instantaneous readings over that 8-hour period; that's the advice that I have. 02.35PM

You have the email there in front of you?---Yes.

There's two parts to it, are there not; there's the morning 8-hour average?---During 0030 and 0830, yes. 02.35PM

During 0030 and 0830. There's the morning 8-hour average and then there's a series of short-term readings for the afternoon?---Yes, that's what's here.

Accepting that Dr Torre has provided an 8-hour average for the morning, that threshold of 27 ppm over 8 hours was exceeded that morning, was it not?---Well, I'll take you back to the other part of the email where my staff member, Vikki Lynch, discussed these readings with Dr Torre and it was decided that there were difficulties in translating those readings to something which could be interpreted under the protocol. 02.36PM 02.36PM

Yes, and that is clearly a reference to the readings taken in the afternoon, is it not?---Yes.

Ms Lynch doesn't deal at all with the 8-hour average that was recorded for the morning, does she?---The discussion here relates to issues relating to generation of what we needed for the protocol from these types of readings. 02.36PM

And there is no discussion in Ms Lynch's email of the 8-hour average that was obtained for the morning, that exceeded the threshold that had been determined to be appropriate in the course of that afternoon?---There is no specific discussion, but those readings - my understanding is that those readings were on the same basis as the other readings, therefore they did not meet the criteria as discussed with the EPA for triggering the protocol. 02.36PM 02.37PM

I have no further questions. Do any Members of the Board have anything further?

MEMBER CATFORD: You mentioned the long health study and just to understand your response, Dr Lester, I think you were saying that, if during the course of the study information arose that could influence health service responses or other actions to help the community, you would take those steps or that would initiate a response; is that right?---Absolutely, that's right, yes. 02.37PM 02.37PM

Would that also apply to individuals that you are actually examining and reviewing and following? If their health was deteriorating and the investigators were concerned, would that stimulate practical action to that individual?---Yes, absolutely. If the investigators 02.38PM

found something which was concerning which was not already being addressed adequately by their own health provider, we would certainly bring that to the attention of their health provider and/or assist them to obtain any other referral or any other assistance that they might need to bring that health issue under control or to assist with that health issue.

So in a sense, as well as providing information, if you like, for the greater good, it could actually be a form of additional healthcare intervention for that individual?---That's right, that's certainly the intention, yes. 02.38PM

That's very commendable. This issue about confusion in the general public, can I just return to it once more. I'm sure we're all very impressed with your own personal application and giving 21 press conferences, all this media activity was just amazing. But for some reason it wasn't really connecting sufficiently. I mean, would you accept that? That's the wealth of the feedback we've been receiving so, despite all that effort, what wasn't working properly or can you begin to unpick or explain the sort of difference between a huge amount of input, concern, effort by all sorts of people, but unfortunately the community - well, certainly the ones that we have been hearing from felt they were left in the lurch a bit?---Yes, look I accept that, I've also heard that feedback myself; that's something we do need to reflect upon and we will certainly do a thorough review after this and, as I've said, the information from this Inquiry will be very helpful to that. 02.38PM 02.39PM 02.39PM

It's interesting because mass media and the utilisation of press conferences and other media interviews is a technique which Chief Health Officers, as you would know, have used for a long period of time. I used obviously the same technique in the 2009 H1N1 influenza pandemic and that seemed to be quite well received at the time. So, in trying to reflect on what perhaps was different about this, I think that the technical information was perhaps slightly more technical than something like influenza which is perhaps more easily understood, and I think getting the message consistently delivered at the local level as well as me giving press conferences is fine, but doing more at the local level to engage the local community champions, I think that's where we really need to focus our effort now. 02.40PM 02.40PM 02.40PM

Thank you very much.

MS RICHARDS: If there's nothing further, may Dr Lester be excused.

CHAIRMAN: Thank you, doctor, you are excused. 02.41PM

<(THE WITNESS WITHDREW)

MR ROZEN: The next witness is an expert engaged by the Inquiry, Professor Don Campbell. I call Professor Campbell.

<DONALD ALEXANDER CAMPBELL, sworn and examined: 02.41PM

MR ROZEN: Good afternoon, Professor Campbell?---Good afternoon.

For the record, could you please state your full name?---Donald Alexander Campbell.

Your professional address is Monash University, Clayton South in Victoria?---Monash Medical Centre, 246 Clayton 02.42PM

Road, Clayton South.

I stand corrected. Professor Campbell, you've been engaged by the Inquiry and have provided the Inquiry with an expert report on matters falling within your area of expertise; is that right?---That is correct. 02.42PM

The report that you have provided is dated 28 May 2014?---It is.

I'll just get you to identify the document for us, it's a report of some 32 pages?---It is.

Then attached to that is a CV, impressive if I may say so, 02.43PM which is slightly longer than the report, 35 pages; is that right?---Possibly, yes.

I won't take you through that page-by-page, you'll be pleased to know. Dr Wilson's urging me to but it seems unnecessary. Have you had an opportunity to read 02.43PM through the report before coming along and giving evidence today?---Yes, I have.

Are the contents of the report true and correct?---Yes, they are.

And the are the opinions in it opinions that you honestly 02.43PM hold?---They are.

I tender the report.

#EXHIBIT 48 - Report of Donald Campbell.

02.43PM

MR ROZEN: The CV speaks for itself of course, but perhaps if I could just identify the key parts of that. You currently hold the position of Professor of Medicine, Southern Clinical School, Monash University?---I do.

You are also the Program Director of the General Medicine 02.44PM Program at Monash Health?---I am.

Your qualifications start with a base medical degree from Monash University of 1978?---Yes.

Then you have several postgraduate qualifications which are listed in your CV and you're also a Fellow of the Royal Australian College of Physicians and have been since 1985?---That's correct. 02.44PM

In particular, expertise, as you state on the front page of the report, is in the areas of respiratory, sleep and general physician?---Yes.

You're a clinical epidemiologist?---Yes. 02.44PM

You were in court when Dr Lester gave a brief definition of epidemiology; are you content to adopt that part of her evidence?---Yes, I am.

We won't go over that again. You also have a very extensive and impressive research background and you've undertaken several asthma mortality studies; in addition, you were involved in a review of the lung health program of former SEC power industry workers here in the Latrobe Valley?---That's correct. 02.45PM

You are a board member of the Asthma Foundation of Victoria and have been since 1997?---That's correct. 02.45PM

In terms of your involvement in this Inquiry, it dates back several weeks, does it not? You have been providing information and advice to the Board, primarily through Professor Catford during that time?---Yes. 02.45PM

You have also been present in the hearing, certainly today. Have you also been present in the Inquiry room before today?---I heard Professor Brook speaking yesterday afternoon.

You've also taken part in some of the community consultations that the Inquiry has engaged in, both 02.46PM

with the general community and also with a group of general practitioners from Latrobe Valley?---That is correct.

All of those various involvements, as well as drawing on your general expertise, is the basis for the views that you're able to share with us in this Inquiry?---That is correct. 02.46PM

MEMBER CATFORD: Could I just mention something. Would Dr Campbell just mention what his experience in the Latrobe Valley is, the region?---Yes. In 1979 I was privileged to be an intern at Warragul Hospital, and prior to that I holidayed in South Gippsland as a child, so I've got some connection with the district, and in the conduct of the review of the lung function program, I gained a high degree of respect for the members of the community and particularly for the Gippsland Asbestos Related Diseases Group and their spokesperson, Vickie Hamilton. 02.46PM 02.47PM

MR ROZEN: Who of course the Inquiry has heard from this week. If I can ask you some questions about your report. You very helpfully included a plain language summary for us on page 2, if we could go to that please. You note, consistently with other evidence, including the evidence given by Dr Lester today, that, "The fire at the Hazelwood Coal Mine has the potential for long and short term adverse effects principally due to the release of known air pollutants including carbon monoxide, ozone and particulate matter." We've heard a lot about carbon monoxide and particulate matter, but far less about ozone. You deal with it in your report, but are you able to indicate to us the significance of 02.47PM 02.47PM 02.48PM

exposure to ozone from a fire such as that which occurred here in February and March?---Ozone is produced by the action of UV light on the constituents of what might be - of the smoke, frequently arising from photochemical smog, and the components within that smoke that react under the influence of UV light, and it's a highly reactive oxygen species, it's got a short half life, and the nature of its reactivity, it's most frequently absorbed by organic material and included in that organic material of course is biological membranes, and it's inhaled so it can affect the respiratory tract, and its principal, short and long-term effects pertain to its capacity to promote an inflammatory response in the airways. 02.48PM 02.48PM

It's difficult to tease out effects separate from the exposure to particulates, and the constituents of the ozone components can arise directly from the primary combustion and also from downstream action of sunlight on the constituents of the smoke, and it can be remote from the site, and the amount of ozone produced goes up as the temperature goes up in the ambient air. 02.49PM 02.49PM

You deal specifically with ozone exposure at page 9 of your report, section 4.2. Perhaps if we go to that briefly and if I could draw your attention to what you say at paragraph 24, "People with lung disease, children, older adults and people who are active outdoors may be particularly sensitive to ozone." That's a very similar overlapping cohort with that that you've identified as being susceptible to particulate exposure?---Yes. 02.49PM 02.50PM

Just in relation to those vulnerable groups, you were in the hearing room when Dr Lester explained to the Inquiry the medical basis for that extra vulnerability, for example of children and the other groups that are identified, people over the age of 65, people with cardiac conditions and respiratory conditions. Are you generally content with that explanation that was provided?---Yes. 02.50PM

There was an additional group that you've identified which you will recall was raised with Dr Lester and that is people of lower socio-economic groups. Could you expand on that and the basis for that opinion?---I guess it's based on epidemiological evidence that this is a group who suffer more chronic cardio respiratory disease in general. You then superimpose the impact of this additional insult on that group and their health outcomes are worse. 02.50PM 02.51PM

Vulnerable communities, socio-economically disadvantaged community members are at greater risk. I have to say, it has been a matter of conjecture on my part over the course of my professional career why that should be so; is it because people do not have the opportunity to have good nutrition during childhood and earlier that means that they're at greater risk that their lung function development is not as good, that they're at increased risk, that they're at increased risk of environmental insults, that they're exposed to more environmental tobacco smoke, what is it? I can't say definitively why persons of low SES are at greater risk, all I can say is, they are. 02.51PM 02.52PM

I understand. Can I take you to page 7, section 4.1 of your

report where you talk about carbon monoxide exposure and particularly paragraph 15 where you explain the medical basis for the danger of carbon monoxide. Can you perhaps expand on that for us please? What is it about carbon monoxide molecules and the impact they have on the body that is so significant?---Carbon monoxide has a greater affinity for haemoglobin than does oxygen. Therefore its effect is to displace oxygen. Most oxygen, the vast majority of oxygen that can be delivered to working tissues is delivered by virtue of the fact that it's bound to haemoglobin under conditions of high partial pressure of oxygen in the lung, carried in the blood and released to the working tissues under conditions of low partial pressure of oxygen, so it's just carried and released, carried and released. 02.52PM 02.53PM 02.53PM

The affinity that haemoglobin has for carbon monoxide means that that haemoglobin is not available to carry oxygen, so the person will look pink but they aren't, they're not getting oxygen supply to vulnerable tissues, the vulnerable tissues are called the heart and the brain. But it is also binding in myoglobin which also has affinity, and foetal haemoglobin has an even higher affinity than adult haemoglobin and, therefore, the unborn child is more vulnerable. 02.53PM 02.54PM

At paragraph 18 you identify the initial symptoms of acute carbon monoxide poisoning as including headache, nausea, malaise and fatigue. The Inquiry has heard evidence of a report that was made of some children at an early learning centre, there was a reference to it earlier today, it was in fact the trigger for 02.54PM

Dr Lester's advice to the Education Department about the relocation of certain schools and early learning centres. The report noted on the part of children hyperactivity, headaches, flushed faces and longer sleep times. Based on your experience, are those symptoms consistent with exposure to carbon monoxide?---Yes, I think that is consistent in the sense that hyperactivity is a sign of some sort of excitability. The prolonged sleep time intrigues me. 02.54PM

Is that consistent with fatigue, perhaps?---Possibly it is. 02.55PM

If I can take you to particulates which the Inquiry has heard a good deal about, heading 4.3, paragraph 42. You there distinguish between coarse particles PM 10 and fine particles PM 2.5, and perhaps particularly at paragraphs 46 and 47. Can I just ask you to expand, particularly from the point of view on the impact on lungs and the tissues and the lining of lungs, what the difference is between PM 10 and PM 2.5 and what the concerns are particularly with PM 2.5?---PM 10 particles are deposited - how do the lungs work? 02.55PM 02.56PM There's a tube that starts with the trachea that divides and divides and divides and divides; it divides 22 times in an adult. The alveoli are at the end of that process and the terminal bits of those conducting tissues, respiratory bronchioles and alveoli, are where gas exchanges occurs. 02.56PM

The air that moves down those tubes moves by mass action until you get to the very end and then the gas exchange occurs, not because of mass action but because of the diffusion across the alveolar capillary barrier. The alveolus is this little bubble, and there are 170 02.56PM

of them per cubic millimetre of lung tissue, and all up in an adult human there is something like 500 million of these little alveoli.

In each lung?---Well, 250 per lung; 250 million per lung, so 500 all up. The PM 10 particles deposit by impaction and sedimentation, they're non-respirable. The respirable particles are the PM 2.5s. They are 2.5 microns across, those terminal bronchioles are 200 microns across, and for reference a red blood cell is 7 microns across. So a particle is 2.5, the PM 2.5s are less than 2.5, a red cell is 7, and the airway that they're going down is 200 microns wide. 02.57PM 02.57PM

This is sort of incredibly fragile physiology and these little particles, the PM 2.5s, are comprised of carbon plus stuff, and the stuff includes transition elements and hydrocarbons that have absorbed to the surface. So you've got this very strange vector arrangement whereby these little particles are bringing heavy metals and polycyclic hydrocarbons and stuff into contact with the biological membranes and they're interacting with them. 02.57PM 02.57PM

The body's got two ways of responding to this; cancer formation, when you're bringing cocarcinogens down there, and that's the story about long-term lung cancer risk, and inflammation and the body gets inflamed. The airways get inflamed, the stuff gets across into the vasculature and it promotes inflammation inside the bloodstream and that leads to accelerated cardiovascular disease. So in essence you've got two mechanisms for disease as a consequence of exposure; (1) carcinogenesis, (2) inflammation, the 02.58PM 02.58PM

sites of inflammation are in the airways and lung and the circulation, leading to cardiac disease and respiratory disease.

I might get you to slow down a little bit, if you could please, Professor Campbell?---Sorry, I was getting excited. 02.58PM

Some of these words are unknown to me, chances are they may be unknown to others in the room as well, so we'll take it nice and slowly.

MEMBER PETERING: I was looking forward to your summary, Mr Rozen. 02.59PM

MR ROZEN: That might be a little bit risky, but maybe if we could take it to another level. In the material you've identified asthmatics and children with asthma as a particularly vulnerable group in relation to inhalation, particularly of PM 2.5. Can you expand on the explanation you've just given to indicate why medically they're a particularly vulnerable group?---Basically when you're born you might have 20 million of these alveoli, and when you're fully grown at about 18 you've got 250 per lung, so something happens in between, you grow more and more of the alveoli. At critical exposure periods, if you get an insult to this system, then you'll have arrested development, some of which you can recover from and your lungs will grow, but you miss out on the bit that you didn't get. 02.59PM 02.59PM 02.59PM

Also, the airways are vulnerable to these insults, so there's a risk that a person who has a predisposition to asthma will have their asthma made worse. The question is, could exposure to this trigger 03.00PM

the onset of asthma and it's arguable that it can. We've got these effects on the genesis, if you like, of a chronic respiratory condition in childhood which tends to be asthma, reactive airways, and in making the airways reactive they're vulnerable to the impact of 03.00PM further insults such as viral infections or other and bacterial infections, but predominantly viral and triggering off prolonged reactivity of the airways. Children I think are vulnerable to the risk of impaired lung growth and to the risk of asthma being made worse. 03.00PM

There's been considerable evidence before the Inquiry, particularly from the community witnesses, about health impacts during the course of the fire; we've heard evidence of a parent of a daughter who got a blood nose at one stage without having any previous history of 03.01PM blood nose, we've heard of people with sore throats, sore eyes and so on. One can assume, although it's always dangerous to assume, a connection between those symptoms and the exposure to smoke. Can you comment on that?---If I'm asked to comment about a specific 03.01PM individual I'm a bit reluctant because that's sort of saying that you've got telepathic powers, I suspect. Why do people get nose bleeds? Most people get nose bleeds because they pick their nose. Why do they pick their nose? Because their nose was irritated. Why was 03.02PM their nose irritated? Their nose was irritated because they were exposed to these noxious fumes that were irritating their nose and their mucus membranes and their throat and their major airways, so I'll speculate but not wish to attribute it to the individual that 03.02PM you've spoken to me about.

Thank you. At paragraph 59 of your report you make reference to PM 10 and that is coarse PM, what you've referred to as coarse particulate matter. Yes.

You refer there to a review in 2005 making the scientific community aware again of the potential health risks associated with coarse particles. Is what you're saying there in essence that we shouldn't neglect the effect of PM 10?---I think we can't write - it's not as though we're dropping PM 10s and only focusing on PM 2.5, and the one is a reasonable proxy for the other. 03.02PM 03.03PM

Towards the bottom of that page you refer to the short-term exposure effects of PM 2.5. You were probably in the Inquiry room yesterday afternoon when Professor Brook said they were extremely well recognised. Do you agree with that description of the state of scientific knowledge about the short-term exposure effects of PM 2.5?---To those who were seeking out that information and were assiduously seeking it out, I will say, yes, it was well-known. Had it washed over the rest of the community as an area of major concern? I don't know. In short, yes, I think the knowledgeable community that should be concerning itself with this knowledge would be well aware of the potential for harmful short-term effects or harmful effects arising from short-term exposures. 03.03PM 03.03PM 03.04PM

We need to be careful, don't we, with the language; I think we tend to be a bit loose. There's short-term exposure and long-term exposure; there's short-term effects and long-term effects?---Correct. 03.04PM

You can have long-term effects from short-term exposure but

the two are quite different. What are you referring to when you talk to short-term exposure? I see you refer to a 24-hour average over two days of monitoring; is that the conventional understanding of short-term exposure?---I specifically sought out what I thought to be a reasonable definition, and that is my understanding from reading the literature. 03.04PM

So we're not talking about weeks when we talk about short-term exposure, or when the literature refers to short-term exposure, it is that 48-hour exposure?---Yes, and the short-term effects are time lagged by one or two days consequent upon that short-term exposure. So, if you're exposed today, you'd be looking for effects tomorrow or the day after. 03.05PM

I understand. You were in the hearing room, I think, when Professor Catford raised with Dr Lester evidence that we've heard about some particularly almost spectacularly high short-term readings during the course of the fire; one reading of 1,300 µg/m³. The question is, from your background and experience, taking for example an asthmatic child, would that be a particular cause for concern even if it's only for a short period, two to four hours or that sort of timeframe?---I guess I'm going to put on my clinician's hat and attempt an answer to that to say, well, look, we're dealing with a complex issue, we have an information deficit, we don't have the information that would give us a definitive answer but we have to make a decision, and to not make a decision is to make a decision; so you don't have a choice, you've got to make a decision. It's either, it is or it isn't. 03.05PM 03.06PM 03.06PM

If I'm the clinician responsible for the child's care, I would be concerned. It's a long-winded answer, the answer's, yes. I would be concerned because I have to err on the side of being concerned because I don't have the data that would give me a definitive answer, it's conjecture based on knowledge of mechanisms and evidence about longer-term exposures.

So you'd default to a conservative concerned approach?---Yes, I would.

I'm not sure, but it seems to be a similar point you're making at paragraph 70 of the report where you refer to one of the major findings to date in relation to shorter exposure times. Am I understanding that's the same point you're making there, of very high short-term exposure - - -?---Yes. 03.06PM 03.07PM

- - - is something that is identified in the literature?---It was trying to tease out the literature to see whether there was evidence, and I think I say basically in the following paragraph, "Repeated multi-day exposures may result in larger health effects than the effects of single days." And it's to do with whether or not, if you've got these short spikes, frankly, do the effects of area under the curve sum or is there some sort of multiplicative interaction? How does the body treat that sort of exposure, short, sharp shocks at intervals close together? 03.07PM 03.07PM

I think we say here, "The effects of long-term exposure are greater than those observed for short-term exposure, suggesting the effects are not just due to exacerbations but may be due to progression of underlying disease." 03.08PM

You've got two possible mechanisms arising from the nature of those insults; (1) that you've hit the system and there's a direct insult and a response to that direct insult, but then repeated insults cause further progression of underlying disease, and that might be why there's a contribution to risk of progression of atherosclerotic disease and a curious relationship with diabetes. The presence of diabetes makes the effect of the insults worse, but the insults will bring on the expression of diabetes, it seems, and it's curious. 03.08PM 03.08PM

That's type 2 diabetes in both situations?---Yes.

It might be stretching knowledge here, but has that got something to do with insulin production or insulin absorption?---I think it's to do with the fact that you stress the system, and under conditions of stressing the system, you have resistance to insulin and resistance to insulin is expressed as diabetes; raised blood sugars, and if they trigger the definition levels, then it's diabetes. 03.08PM 03.09PM

I'll ask you a little bit about volatile organic compounds, VOCs, you deal with these at 4.6 starting at paragraph 93 of your report. You say that, based on your knowledge and reading of the literature, very little is known about the health effects of the release of so-called air toxic from coal mine fires. Are we now in the area of the nasties that can be attached to the particulate matter?---(No audible response). 03.09PM

I see that you refer to volatile gases including benzene in paragraph 95 as being identified in some of the literature that you've examined. Is that something 03.09PM

that you have any particular expertise in relation to or are we getting to the edges of - - -?---You're getting to the edges of my expertise. All I can tell you is the limited amount I know and that is really an area for a toxicologist. We know that benzene has contributed to risk of cancers arising from the bone marrow, leukemias and aplastic anaemia, and there are concerns about the neurological development in the unborn child. 03.10PM

As to being able to quote chapter and verse about toxicology arising from acute exposures, I am not an expert in that field and hopefully the longer-term health study might devote some attention to those sorts of questions. 03.10PM

Perhaps informing that consideration is - the only evidence, I think I'm right, before the Inquiry about measurement of benzene levels at any concern is in Mr Merritt's statement, I don't think we need to bring it up, but just for your information, Mr Merritt, who gave evidence as the former CEO of the Environment Protection Authority, told the Inquiry that, of the volatile organic compounds measured, he said there were 14 measured, only benzene exceeded the assessment criterion of 9 ppb. He cites two of the three sampling locations where that occurred and the readings seem to be in areas of Southern Morwell at the early learning centre and at the Morwell Bowling Club, both one reading of 9.2 ppb and another of 14 ppb, and in fact a third of 9.7 ppb. As you say, they're matters that ought to be part of the information before the long-term health study, something to look out 03.10PM 03.11PM 03.11PM

for?---Yes. The fact that one of those centres is the early learning centre is of concern.

It is of concern. The evidence is that it was closed at the time so there weren't children there which we probably all will be very grateful for. 03.12PM

Before leaving your report, can I just ask you a little bit about the long-term health study which you deal with at heading 6, paragraph 103. You have some experience to draw on in relation both to long-term health studies that you've been involved in and one 03.12PM that was going to happen in the Latrobe Valley in the 1980s but never did, is that right?---I found a report from CSIRO publication in 1985 that alluded to the fact that a long-term health study was to be implemented in the Latrobe Valley in 1985, but I am unaware of any 03.12PM long-term health study other than the study of the lung function study of health outcomes for asbestos exposed former power industry workers.

That was the one you were involved with in the early 2000s reviewing?---Correct. 03.13PM

The long-term health study is long overdue in other words, is that the case?---Arguably.

You advocate at paragraph 105 that the study should be established with the intent to run for 20 years. Why 20 years?---Important studies of long-term health 03.13PM outcomes, there's the Busselton study, population based study in Western Australia, there's a cohort study out of South Australia of respiratory events of early childhood study, there are international studies, and they are set up expressly to have an inception cohort 03.13PM and run for a long time and to recruit into these

studies waves of new recruits in the district so that you can see whether or not there have been changes for different cohorts as you go through. They can be quite sophisticated in their design and they can examine important questions. The ones I'm familiar with predominantly are with respiratory health outcomes. They've answered important questions about asthma incidents, the development of new cases and patterns of severity. 03.14PM

There was a Tasmanian asthma study that was conducted on every 8-year-old in Tasmania, the cohort had every 8-year-old and has followed them all the way through now for over 40 - I think 40, yes, 40 years. It's important that we have a long-term timeframe. 03.14PM

So you'd see 20 years as a minimum period, is it, or an optimum period?---I think so. 03.14PM

Which of those is it?---Sorry, I'd be aiming out a long way, that you would expect that it's set up with the idea that several generations of researchers in partnership with the community will be focussing on trying to improve health outcomes. 03.15PM

That was the next thing I was going to ask you about. What role from your perspective ought the community have in such a study?---Community ask - my experience of dealing with the former power industry workers is that the community are very switched on and have a very good understanding of what are the important questions, and they need to be satisfied that those questions have been addressed and it hasn't been captured by the researchers for their own purpose. So I'll speak against me as a researcher and say that the researchers 03.15PM 03.15PM

should be in service of the community and focus on outcomes.

If I could change the pace a little bit and ask you about the question of messaging, particularly the health messages that came out during the course of the fire in February and March, and you've sat through the evidence of Dr Lester where there's been a detailed examination of the messaging. Perhaps if I could ask for one of those messages to be brought up, it's 18.4 of Dr Lester's statement and it was a message, if my notes are correct, that was released on 17 February. This is a message that was released after what's been described by a number of witnesses as being a particularly bad weekend of smoke exposure in the Morwell area. You've heard the evidence about the carbon monoxide readings on both 15 and 16 February and the readings of PM 2.5 which were up to approximately 250 in the Morwell South area. Do you have any observations about this message? I'll ask you specifically from the point of view of a local GP who is identified as one of the recipient groups on the message?---I think there's an issue around whether communication is information as transmitted or information as received, and if we took the perspective of the user of the information, the user needs to receive information that can be readily turned into actionable messages. So they've got to receive the information in the form of, okay, here is the problem, here's what you do and it's very much got to focus on that. 03.16PM 03.16PM 03.16PM 03.17PM 03.17PM 03.17PM

If I can again speak and say, well, if I'm the

doctor sitting there and I'm confronted with that individual patient, I need to know what to do for that individual patient and I need to be able to have a message that says, oh, for a young would-be expectant mum this is the problem, this is the message; for a child at school, this is the message; for an outdoor worker, this is the message; for a vulnerable member of the community who's got chronic cardio respiratory disease or asthma, here is the message, and it's really got to be actionable at sort of three levels. Anything more sophisticated than traffic lights, colour-coded, three levels, is going to get lost, and I'll speak from my perspective as the receiver messages, if you make it more sophisticated than that for me, I will struggle to absorb the information and turn it into an actionable message. 03.18PM 03.18PM 03.18PM

So, I read cartoons, I like cartoons, I can read dense information which is scientifically sound, but if I am in the heat of battle and I'm under pressure, we're tense, we've got the fire, we've got smoke, I've got anxious worried people, give me a message that I can turn into action steps that help reassure my patient, and the information has to be information I can share with the patient. Cartoon format, colour-coded traffic lights in a green, orange, red, be what is it, alert, be alarmed, be afraid. You know, really simple actionable messages and I think that there are fields of endeavour devoted to this, particularly linking it to social media that can turn it into very simple stuff. 03.18PM 03.19PM 03.19PM

Going back to the consulting room of the GP and a parent's

come in with an asthmatic child and they want to know, should we be staying in Morwell for the time being or should we go somewhere else, should we explore alternatives? Looking at that message and read through it, are you getting the information you need to answer that question from this message?---I think the real issue is, I've got to work to find it, and if I've got to work to find it, then that's a step that arguably could have been done for me, and it's a learning; I don't want to directly - I don't want to be critical. In the same situation I might have done exactly the same thing, but upon reflection, what do I want? I want to be able to sit there and get an actionable message that makes me look that I know what I'm doing and that I'm informed by the best available evidence so that we've got a partnership with the patient and helps them make a decision. The advice has to err on the side of conservatism. 03.20PM 03.20PM 03.20PM

In that regard, you heard the evidence about the - the relocation advice, if I can call it that, on 28 February which identified specific groups. The evidence before the Inquiry is that there were previous periods during the course of the fire, starting on 9 and 10 February and then again on the 15th and 16th, and on the 21st and 22nd where there were very high levels of either recorded PM 2.5 or experienced, in relation to the first weekend where we don't have the data. Can you think of any reason why the relocation advice should not have been given earlier? I want to explore that with you?---My glasses work very, very well in hindsight. 03.20PM 03.21PM 03.21PM

As all do, yes?---So with the benefit of the hindsight, I guess the question is, if I could take it through how I've thought my way through what's going on. This started as a bushfire but very quickly became a hazardous materials fire in an industrial setting that 03.21PM was of prolonged duration and of intermittent high intensity, and the literature that you go to to find out what to do doesn't exist. There is no literature to tell you about this phenomenon, and these exposures are coming in peaks. All of the monitoring systems 03.22PM have been set up to tell you about ambient air pollution in a big city. So we've got information about ambient pollution levels in a big city, not about a point source and not about one where there's such local variability related to the influence of plumes 03.22PM and wind directions and a whole bunch of confusing but very, very important factors. Then I'm confronted with one person who's saying, well, what do I do? And you say, as the clinician, I wish to err on the side of conservatism; I don't have the luxury of coming back 03.22PM and having committed what I call a type 2 error, where I didn't do something where I wished I had.

I can do things and wish I hadn't afterwards, or I can not do things and wish I had done something afterwards, they're the two types of mistakes we make 03.23PM and we make them all the time. So what's my default setting? It's conservatism, it's to say, look, we've had two peaks, you're vulnerable, you're at risk of morbidity, hospital utilisation, we don't have the luxury of coming back afterwards if you are the extra 03.23PM person who dies. Maybe you step outside, you relocate,

find your sister in Melbourne or go down to Seaspray, get out of here, so that's a long-winded answer to your question.

I think I understood. Just going back to those local GPs and local nurses, and I think pharmacists was another group that was referred to by Professor Catford, what is the potential role of such, I think there was a reference to local community health champions? What's the role of such people in the context of a health crisis like this one?---People look to their doctors to advocate on their behalf. There's an important advocacy role for the doctor. The people have a GP, they trust their GP, they expect them to speak up on their behalf, and the same with their chemist, they arguably trust - they have a high degree of trust for the nurse, the chemist and the doctor and they expect them to understand the issue and to have a consistent view and to imbue them with confidence that the healthcare system will look after them, and that the advice they get will be correct for them. I think that's the answer to the question. 03.23PM 03.24PM 03.24PM 03.24PM

Playing that key role, obviously in an ideal world they get the right source of information about a specialised and unusual event to inform the provision of advice that they have to their patients?---Yes. 03.25PM

The next matter I'd like to ask you about concerns the Carbon Monoxide Protocol and particularly the peer reviews that were conducted. That material has been provided to you by the Inquiry, has it not?---Yes, it has. 03.25PM

There are two particular epidemiological reviews that I'd

like to consider. The first is, I think it's behind tab 82 of Mr Merritt's statement?---I haven't seen this one.

If you go to tab 83?---Yes, I've seen this one.

This is the review that was conducted by Dr Fay Johnston from the Menzies Research Institute at the University of Tasmania. Do you know Dr Johnston?---No. Are you sure? I thought this was Anderson. 03.26PM

They're both there. You've got Anderson in front of you there?---Yes. 03.27PM

I'll ask you about that one. If I can ask you to look to the second page of that, please. EPA.0001.007.0001, this is the Anderson one. If we can go to page 2, towards the bottom of page 2 there's a heading, "Rationale for choice of health protection thresholds." 03.27PM Dr Lester earlier gave evidence about the use of the AEG L2 Guidelines and that is the Acute Exposure Guideline Level 2; is that right?---Yes.

The review notes that that's the basis of the thresholds, and just so that we're clear, the lowest of the thresholds which would trigger action under the protocol was 27 ppm for carbon monoxide exposure?---Yes, that's over an 8-hour period. 03.28PM

Over an 8-hour period, that's right. If I correctly summarise what this review is saying, it's calling into question whether, in the context of this particular fire and the sort of exposure that was occurring potentially in this fire, whether the AEG L2 values are the correct basis?---Yes, I guess the reference here is to the standard being the level which, if exceeded, would induce angina in susceptible individuals. So 03.28PM 03.29PM

that's that your safety level pertains to stressing the heart muscle that's in jeopardy. I guess I would probably agree with the reviewer, that we might like a lower level than that threshold for that at risk segment of the community. 03.29PM

As I understand it, what the reviewer is saying, and the other review by Dr Johnston is essentially consistent with this, it's calling into question whether a 4 per cent carboxyhaemoglobin level is the right threshold particularly having regard to the World 03.29PM Health Organisation 2010 publication, which is the one that's referenced in both the peer reviews as being the more appropriate guide which, as it turns out, is considerably more conservative in where it sets the limit. Am I understanding that correctly?---You are. 03.30PM

That's an approach which I think you've already told us you would endorse. An approach that is set at a no effects carboxyhaemoglobin level of 2 per cent rather than 4 per cent is a more appropriate level to incorporate?---I guess part of my concern is that the 03.30PM evidence seems to be that you've got differential exposure in the community, you've got the potential for change. Carbon monoxide's colourless, odourless, tasteless, and these ambient air monitors may not give you the information that you need to make decisions 03.30PM about an individual at risk who is exposed, and they're 8-hour averaging periods. I guess you're concerned about what might happen in terms of exposure that may exceed that to a greater degree arising from the plume what's generated off a coalface fire. We've got a fire 03.31PM that's producing carbon monoxide, it's going to roll

over the community and deposit - there will be areas where there's the potential for concentration, whether in poorly ventilated regions or not. There's a whole bunch of unknowns. So arguably, given the vulnerability of certain members of the community and 03.31PM the margin that you arguably need, what is an appropriate standard? I'm taking the perspective of the clinician, not the epidemiologist, and I'm just saying, well, I want a margin of protection for the vulnerable which is not set at the point at which they 03.31PM develop cardiac symptoms by virtue of their exposure.

You want to be somewhat short of that?---A bit short of that.

The net effect, as I read the peer review documents, of using a 2 per cent level as your threshold rather than 03.32PM a 4 per cent level, is that when that converts into a parts per million exposure standard, it drops from 27 to 9; that then becomes the trigger point, and I'm not asking you to do that calculation, I'm just trying to get you to agree with me that that's what the peer 03.32PM reviews are saying?---That is my understanding of what the peer reviews are saying, yes.

Instead of, as was proposed in the Carbon Monoxide Protocol, the public health officials don't need to take any action or give any warnings until there's a 27 ppm 03.32PM reading across an 8-hour period, what the peer reviews are saying is, no, 9 ppm should be the trigger for action consistently with what's known about carbon monoxide exposure?---We have a situation where we have to make a decision, and it's the same scenario as last 03.33PM time; we have imperfect information conditions. We

don't know what exposures are going to be generated in isolated pockets by virtue of this plume and the prevailing wind conditions. There are going to be people who are differentially exposed to a greater degree than others and we've got people who are differentially at risk, what's the appropriate standard? Should it be up here, symptomatic from their underlying disease, or should it be a little lower? They're the questions that I have for Professor Campbell. 03.33PM

Do Members of the Board have any questions? 03.33PM

MEMBER CATFORD: I just wanted to ask your view about this issue we had been discussing earlier about who's responsible for the health of the Latrobe Valley and if you have any views. I think you've talked about the advocacy role of the individual clinician for their patient and potentially other health professionals can take on that role at the individual level. But again, particularly thinking, and remembering your long time association with this valley and the chronic health problems that there have been and now of course this further insult to their health and well-being, do you think we have an adequate safety valve for expressing the health of the population?---If we cast the net as broadly as might be necessary, this is a vulnerable community in general, it's suffered a number of toxic insults if you like, it's had its workforce vastly reduced and that's as a consequence of a change in work practice. 03.34PM 03.34PM 03.34PM

There's a whole history about the fate of the mine as a major employer, there's the impact on rural Australia of the loss of the middle-class who were the 03.35PM

bank managers, the business people in the community, there's a whole bunch of reasons why. And you've got a community that's of lower socio-economic status, so they are at risk of poor health outcomes by virtue of all of the above, and then you've had the bitter, 03.35PM bitter memories of the consequences of exposure to asbestos which has left a very big emotional scar on the community.

These are very raw and real wounds. You know, to be able to produce a map which shows you with an X on a 03.35PM house of persons in whole streets where you've got Xs that say this one died of lung cancer, this one died of mesothelioma, that's a very powerful message of people holding onto that memory. Then there's this insult which, we don't know the health consequences of this 03.36PM insult.

So I think it's very important to cast the net wildly and include measures of personal and community resilience and to say, look, this is a community that's at risk; what harm could possibly come from having an 03.36PM advocate for the health of this district that marks it out as a community of special need? Because I think it is.

MR ROZEN: If there are no further questions from Members of the Board, and I understand no-one else has any 03.36PM questions.

DR WILSON: No, thank you.

MR ROZEN: Could Professor Campbell be excused please?

CHAIRMAN: Yes. Thank you, Professor Campbell.

MR ROZEN: Ms Richards will take the final witness, the 03.36PM community witness for today.

MS RICHARDS: The final witness for today is Annette Wheatland who is a community witness. Ms Wheatland, will you please come forward.

<ANNETTE COLLEEN WHEATLAND, affirmed and examined:

MS RICHARDS: Good afternoon, Ms Wheatland, thank you for coming this afternoon. Could you please state your full name and your work address?---Annette Colleen Wheatland. Work address is 241 Princes Drive, Morwell. 03.38PM

You are the Gippsland Regional Manager of Southern Cross Care?---That's correct. 03.38PM

Southern Cross Community Care?---Yes.

That has its Gippsland base here in Morwell?---That's correct.

You have made a statement to the Inquiry?---Yes.

It's a statement with 40 paragraphs and attaches as an attachment the submission that you had earlier made to the Inquiry?---Yes. 03.38PM

You have a copy of it there in front of you?---Yes, I do.

Have you re-read it recently?---Yes.

Are there any corrections you would like to make?---Not at this point, no. 03.38PM

Is it true and correct?---It is true and correct.

Thank you, I tender that.

#EXHIBIT 49 - Statement of Annette Wheatland. 03.39PM

MS RICHARDS: Ms Wheatland, you live in Traralgon, work here in Morwell at Princes Drive just on the other side of the railway line from where we are now?---Yes.

You work managing Southern Cross Care in the Gippsland region. Can you tell us about that organisation, what 03.39PM

it is and who its clients are?---Southern Cross Care is a private not-for-profit charitable organisation, predominantly funded by Federal or Commonwealth funding, it's an aged care organisation. Southern Cross is across, we work across Victoria, we have offices in metropolitan Melbourne and in other regional areas in Victoria. There is a bit of an affiliation with Southern Cross Care Australia. 03.39PM

Southern Cross as an organisation in Victoria, we provide services to about 1,400 clients across Victoria, which includes residential and community care and over 1,300 staff are employed by Southern Cross Victoria. 03.40PM

Here in Gippsland are, we've been in this area since 2001. I have been in this role since then, starting up the branch here in Morwell. In Gippsland we provide services to well over 300 clients across Gippsland and we employ over 45 staff across Gippsland. 03.40PM

Gippsland's a fairly large region?---Fairly large.

What are the boundaries of the area that you're responsible for?---Gippsland. 03.40PM

So, from Cann River through to Warragul?---Yes, pretty much.

Down to Leongatha, Wonthaggi, the whole area. In Morwell, approximately how many clients do you have?---Probably about - it's fluid, but at any one time 45. 03.41PM

In the larger Latrobe Valley?---Probably well over 100 at any one time.

What services do you provide for clients in the Latrobe Valley?---In the Latrobe Valley we don't have a residential facility, all of our clients live in their own homes. We have two different programs that run 03.41PM

from the Morwell office. We have what we call the Home Care Package Program and we have 187 care packages that we provide to clients. Basically it's a case management program. So we support clients to be able to stay at home for as long - elderly, sorry, all of 03.41PM our clients are elderly, frail, and we provide supports to them to be able to remain at home. So our other program is a direct care service, so we provide personal care services, home care services to clients through other agencies as well as to our own client 03.42PM service across Gippsland.

How does a client work with you to work out what care or what assistance they're provided?---If they're a case managed client they'll work very closely with the case manager, and together they'll work out a plan of care. 03.42PM It's different for every client, every client has different needs, but essentially a basic package of care, be it high care or low case because we provide both high and low care services, that's pretty much the equivalent to high care and low care residential 03.42PM services, the funding is the same sort of stream. It could be a combination of personal care, so they might need assistance with showering, dressing. Home care, we usually do the sorts of things that they can no longer do for themselves at home which supports them to 03.42PM be able to stay at home, shopping, assistance to get to appointments, those sorts of thing.

You said that Southern Cross Care has about 1,300 staff in Victoria. In the Gippsland region how many people are employed with Southern Cross Care?---Over 45. 03.43PM

That divides roughly into two groups; there are a number of

people who work in the office, including I take it the case managers?---That's right, yes.

Then there are a number of people who - - -?---Field staff.

Who are field staff?---Yes.

So health professionals and carers?---Yes. 03.43PM

The field staff would have a minimum qualification of a Certificate III in Aged Care and the office based staff and case managers would have a tertiary health qualification.

So it's the field staff who actually go to people's homes 03.43PM and provide the one-on-one assistance?---That's correct.

You tell us in your statement that about five of those people are predominantly based here in Morwell?---Yes.

Moving to the events of February this year, you live in 03.43PM Traralgon. Were you affected by the fire in the mine at Hazelwood at all?---Personally, yes, in Traralgon, yes. There were times when the smoke was very thick in Traralgon; not as bad as what it was in Morwell, and my home, I had to clean it fairly regular because it got, 03.44PM it was covered; every surface in my home was covered in fine coal ash and dust.

But you're in a position to compare what it was like in your home and what it was like in Morwell because you were working here. What were the conditions like in the 03.44PM office where you were working in Princes Drive?---Pretty bad. At the time our air conditioning wasn't working particularly well in the office, and particular parts of the office are exposed - like, the toilets have louvre windows so they're not closable at 03.44PM all, so every day the toilets were covered in,

depending on the type of day it was, either very thick or a fine dust coal ash. The whole office as well became covered in dust, and within the office you could always smell smoke throughout the whole time; we couldn't get rid of the smell out of the offices. 03.45PM

Did you experience any physical symptoms associated with the smoke?---Yes, I did.

What were they?---I'm not asthmatic or have any health problems at all but throughout the time, I'm a self - I had a sore throat, headache, I felt tight cross the 03.45PM chest, red sore eyes the whole time.

Now that the smoke's cleared, have those symptoms endured?---Yep, I'm fine, I'm cured.

You tell us at the bottom of that second page of your statement that you were listening to the authorities 03.45PM for advice. What was the message that you got from what you heard?---Difficult to make a decision as to know what to do. The advice that we were getting initially was that everything was okay and that we were safe and there was no harm to communities, there was no 03.46PM action that we needed to take. But I just had to step inside the office or outside the office and know that that, and know myself, that that wasn't right. Plus we had clients and, like I said, all of our clients are frail and elderly so we had clients that would be 03.46PM ringing up quite concerned, what's going on, what do we need to do? So it was very difficult to know what to do.

We were getting a message from the authorities saying that everything was okay, but we knew ourselves 03.46PM and our clients were also telling us that they knew

that it wasn't.

Can we be a little bit more precise about the authorities. Where were you obtaining your information?---Radio, TV, newspapers. I went to one of the community meetings at Kernot Hall myself. 03.46PM

This was the one on 18 February?---Yes.

You also tell us that you were viewing the EPA website regularly?---Yes.

For what reason were you checking that website?---To check out what the levels were basically in Morwell South and 03.47PM in Traralgon, just to keep a bit of an eye. It was important - like, as the Regional Manager it's my role to make sure not only that our clients are safe but the staff as well, so it was important for us to know just what was happening out there and what the levels were. 03.47PM

How did you manage the fact that you were sending staff out to work in conditions that you felt to be unsatisfactory?---Pretty bad actually, because I knew how I felt myself, so it was very difficult to authorise for staff to go out into the community, but 03.47PM we had clients that are vulnerable and at risk so we needed to know that they were safe and the best way to do that, apart from phone calls which we did on a regular basis for those that remained, was to check out the homes and then our staff report back about how 03.47PM they're progressing, how they're faring basically.

MEMBER PETERING: Ms Richards, may I just ask Ms Wheatland, did you see the community information sheet that was produced by the Department of Health, three pages on 14 February?---I think so. There was quite a few 03.48PM documents. I think so.

And that gave some sort of suggestions about actions to do. Was that helpful?

MS RICHARDS: We can certainly get the document?---Yes, I'd have to see it. I probably did because there was a range of information that was put out in the media and all sorts, so it's difficult to remember exactly what. 03.48PM

MEMBER PETERING: I think it was Annexure 7.

MS RICHARDS: The evidence is that this is an information sheet that was produced for and available for people that attended the community meeting on 14 February, which I think was not the one that you went to?---No. I do recall getting something, I don't know if it was this exact doubt, but I do recall getting something similar from that meeting. I'm not sure if it was this one. 03.49PM

Take your time to have a look at it and see if the advice that's in it is familiar?---Yes, that looks similar to what I'm sure that I saw, I think.

Did the information in that assist you to - - -?---Not really. 03.50PM

- - - provide advice to your clients?---It did assist in providing advice in so much as we could sort of quote from this, but this was the advice, which was pretty much that, unless you were susceptible in some way or vulnerable in some way that you would be okay. All of our clients - - - 03.50PM

All of your clients are in the vulnerable group, are they not?---Yes, that's correct, so our advice was to leave the area if they had the ability to do that, and we helped them in any way that we could to do that. That was generally our advice because they are all 03.50PM

vulnerable, and that was before the advice came out that vulnerable people should leave.

Why did you provide that advice to your clients before Dr Lester formally made that recommendation?---Because they were telling us that they weren't feeling well. 03.51PM

MEMBER PETERING: Also, Ms Wheatland, if I may ask, Dr Lester gave evidence about - I think the next annexure was a smoke advisory alert that was issued to community organisations. Were you a recipient of those smoke advisory alerts?---I don't recall. I'd have to 03.51PM see one.

You may have been here when Professor Campbell gave his explanation that it would be helpful if there was some type of a traffic light system, an action that you could understand, what does this mean?---Yes, I can 03.52PM relate to that because it would be helpful to have just a step-by-step guide, which I assume is what he meant. No, I don't recall seeing those.

It says there on the first page, "Issued to community groups." So I'm just trying to get a sense of how wide 03.52PM that community group was?---I don't believe that I saw that.

MS RICHARDS: I was asking you about how you managed your health and safety responsibilities to your staff. Did you adopt a system of sending staff who lived in 03.52PM Morwell out of Morwell?---Yes, we did.

And vice versa?---Staff reported feeling unwell and feeling reluctant to remain and work in the area, so wherever possible we tried to send them out of the area and then we had staff that would, say live in Moe, we'd bring 03.53PM them into the Morwell area to work to sort of lessen

the exposure or share it around a bit, if you like. That was all that we could do.

On 24 February you and other members of your staff visited the Community Health Assessment Centre?---First day it opened, yes. 03.53PM

Other evidence suggests that it was opened on 21 February, although - - -?---It might have been the 21st, I can't recall.

Anyway, you were there on the 24th with other members of your staff?---It might have been the 21st, because I know I was one of the first people that attended, so perhaps it was the - maybe I've got the dates not quite right. I'm pretty sure that when I attended I was about the second or third person to attend. 03.53PM

You say that you didn't feel that it was a comprehensive assessment?---No. 03.53PM

Was there a referral given to you?---No.

Did you consult with your general practitioner about the other symptoms that you were experiencing?---No.

For two weeks you'd persisted in working in the office, but on Friday the 21st you decided not to persist. Why was that?---I think that might have been the day that the levels in the afternoon - that was the Friday, yes. I think that was the day that the levels peaked at about, might have been 1,500, I can't remember the exact level, but it was quite high and we were experiencing I'd say distressed staff in the office. So it was about 4 o'clock, I think, in the afternoon and I just sent everybody home, and then on the Monday morning back at work I was talking to our head office, because we had been in constant touch with them, and a decision 03.54PM 03.54PM

was made that we would need to relocate because it was - the smoke was just too unbearable basically in the office.

So there are two Fridays that you talk about at paragraphs 20 and 21 of your statement; one when you just decided to send the staff home because the air quality levels in Morwell were sky high?---Yes. 03.55PM

But it wasn't until the following Friday that you made the decision to relocate the office, according to your statement?---Did I? I think it was the Monday. 03.55PM

The Monday?---Yes.

You tell us in paragraph 21 that the decision was made at around the same time the Department of Health advised people who were in vulnerable groups to consider relocating?---I can't recall the exact sequence of events. My recollection, without reading what I have written, was that it was on the Friday that we sent staff home and then I think it was the following Monday that we decided to relocate. Oh, hang on, it was probably the following Monday that we decided to relocate but it probably took us a week after that to actually find somewhere to relocate to, yes. 03.55PM

In the end, your decision to relocate was independent of the advice of the Chief Health Officer?---I believe so, yes. 03.56PM

It was based on your own assessment of the working conditions?---Yes, in consultation with staff and head office, yes.

You were able to find somewhere to relocate to?---Yes, it took a week. 03.56PM

You opened there on 3 March?---Yes.

Although the air was clearer, it was a little constrained?---Yes.

While you were working from that location at the old Moe Hospital, you had an unexpected event in your office here in Morwell. What happened?---Yes. I was coming back to Morwell - I live in Traralgon so I was passing through for two reasons and dropping by the office. The first reason was to collect the mail, which initially was from the office and then the mail collection changed to the Post Office in Morwell, and also just to check the integrity of the office to make sure that everything was okay, and on that particular Monday morning when I came into the office the kitchen area, there was a pool of water, and when I went up around the corner there was a whole lot of water, there clearly had been a flood and most of the damage was down the walls of our communications room where all of our IT equipment is, and there was a lot of water, the carpet was very soggy, there was a lot of coal dust and ash damage down the wall. 03.56PM 03.56PM 03.57PM 03.57PM

The IT equipment was wet, ruined, there was no power in the building at all. The water did about $20,000 worth of damage to our IT and communications equipment. It was lucky that we were relocated at the time, so we were able to continue our business as usual, but it was very distressing and disruptive, it meant a lot of work for not just myself but the whole organisation. We had to have IT come down and replace all the equipment, purchase all the equipment and come down and quite a number of visits to fix it up and replace basically. 03.57PM 03.58PM

Fortunately that equipment was insured and you expect that the cost of replacement will be covered by insurance?---That's correct, and the clean up.

What caused the flooding?---The plumber, who came and checked out the roof, said that it was a build-up of coal dust and ash in the down pipes and it blocked and overflowed. 03.58PM

Moving the focus back to your clients, you told the Board that you did assist clients to move out of the area before the Chief Health Officer's advice of 28 February?---Yes, that's correct. 03.58PM

Once she had made that call, provided advice to people who were in vulnerable groups to consider temporary relocation, did you revisit the question of relocating with your clients?---Yes, absolutely. Many of our clients had already chosen to move anyway voluntarily so we assisted them as best we could. Some just took it upon themselves and left anyway, didn't need any help from us, they had family that could help them. 03.59PM

Once we got that advice we found it quite unsettling because we'd already been moving clients anyway, but then we also had a few clients that didn't want to move, they decided that they would try and stick it out. Some people just don't want to leave, you know, they like to stay in their own homes and we just had to try and support them and help them as best we could so that they were as safe as possible. 03.59PM

You have a couple of matters that you've raised at the end of your statement under, "Improvements for the future", and I'd like to ask you about a couple of those. The first is paragraph 36. You make the point that there 03.59PM

should have been earlier monitoring and earlier advice about what to do. What would you of liked to have seen?---To me it was pretty obvious when I walked outside or just breathed the air in the office that things were not right, just because of the way that I felt personally. So I knew that, if I'm healthy, how would it feel for our vulnerable clients who aren't quite as healthy as what I am and yet I felt unwell? 04.00PM

So I sort of thought there probably should have been earlier warnings or advice for vulnerable people to move because of the levels, I believe, but mainly based on my own personal experience, that I felt unwell, so I think that elderly and vulnerable people would have felt a lot worse than what I did. 04.00PM

Then you comment on the change in the advice after nearly three weeks. What effect did the change in the advice that people now should consider relocation have?---It was quite unsettling by that stage, because we'd already gone through so much and it was very difficult for us to make a decision based on the advice that we were given or to know what to do. 04.00PM 04.01PM

We're Government funded, largely Government funded, so we're pretty much obliged to take the advice of the Government authorities, and I found it really difficult to make a decision to know what to do because the advice was pretty much that everything's okay, but I knew it wasn't; like I said, within myself, I knew that it wasn't okay. 04.01PM

Thank you, Ms Wheatland. I have no further questions. Do Members of the Board have any further questions? 04.01PM

MEMBER PETERING: Just to clarify the last paragraph there,

paragraph 37, would you like to elaborate, "Residents were not being treated well." What would you regard as a suggestion for improvement? You felt that the residents were not being treated well, what would you have preferred to see or experience?---Clearer guidance and advice and I think, like the previous doctor had said, he described it as the red light or the traffic light. Just clearer advice and guidance and perhaps earlier. I think the advice that we got was late, I don't think that it was considered in the context of the vulnerable people that are living in the community. It should have been earlier. 04.02PM 04.02PM

Okay, thank you.

DR WILSON: No questions from me.

MS RICHARDS: As there are no further questions, may Ms Wheatland be excused? 04.02PM

CHAIRMAN: Thank you, you are excused.

<(THE WITNESS WITHDREW)

MS RICHARDS: That concludes the evidence for today. Tomorrow we're moving into a separate area of discourse, the question of communications. 04.03PM

In the morning we have two experts in the area of communications who have been retained by the Inquiry, Professor Jim Macnamara, a Professor in Public Communications from the University of Technology, Sydney and Lachlan Drummond from a communications consultancy, Redhanded, that specialises in regional Victoria. It's proposed that they give their evidence concurrently in the same way that Dr Torre and Ms Richardson did yesterday morning. 04.03PM

After their evidence we'll hear from Merita Tabain

who is the Chair of EMJPIC, the Emergency Management Joint Public Information Committee to which Commissioner Lapsley referred during his evidence.

We have a community witness, Brooke Burke, who I'll seek to interpose after lunch who has a very young child of some weeks who was born during the fire, and the last witness for tomorrow will be John Mitchell who's the Acting Chief Executive Officer of the Latrobe City Council. 04.03PM

CHAIRMAN: Thank you. We'll adjourn now until 10 o'clock tomorrow morning. 04.04PM

ADJOURNED UNTIL THURSDAY, 5 JUNE 2014