CORRECTED

REPORT OF PROCEEDINGS BEFORE

GENERAL PURPOSE STANDING COMMITTEE No. 5

INQUIRY INTO THE PERFORMANCE OF THE NSW ENVIRONMENT PROTECTION AUTHORITY

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At Newcastle on Monday 10 November 2014

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The Committee met at 12.57 p.m.

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PRESENT

The Hon. R. L. Brown (Chair)

The Hon. R. H. Colless
The Hon. G. J. Donnelly
Dr M. Faruqi
The Hon. L. A. Foley
The Hon. S. MacDonald
The Hon. Dr P. R. Phelps

CHAIR: Welcome to the third hearing of the General Purpose Standing Committee No. 5 Inquiry into the Performance of the NSW Environment Protection Authority. Before I commence, I acknowledge the Awabakal and Worimi people, who are the traditional custodians of the land and waters of Newcastle. I pay my respects to elders past and present and extend that respect to other Aboriginals present. This morning the Committee met with representatives of the Environment Protection Authority and the Office of Environment and Heritage for a tour in Newcastle of areas of interest to the inquiry. This afternoon is the third of four public hearings that will be held for this inquiry. The first hearing was held in Sydney on 13 October, the second was held in Lismore on 29 October and the final hearing will be at Parliament House in Sydney on 24 November. Today we will hear from representatives of the Environment Protection Authority, the NSW Minerals Council, the Hunter Community Environment Centre and Hunter councils. Before we commence I shall make some brief comments about the procedures.

In accordance with the broadcasting guidelines, whilst members of the media may film or record Committee members and witnesses, people in the public gallery should not be the primary focus of any filming or photography. I remind media representatives present also that they must take responsibility for what they publish about the Committee's proceedings. It is important to remember that parliamentary privilege does not extend and does not apply to what witnesses may say outside of their evidence in the hearing. Therefore, I urge witnesses to be careful about any comments they make to the media or to others before or after completing their evidence. There may be some questions on notice that a witness could answer only if they had more time. In these circumstances witnesses will be advised that they can take questions on notice and provide answers within 21 days of the notifications of those questions being sent to them by the secretariat.

I remind everyone here today that Committee hearings are not intended to provide a forum for people to make adverse reflections about others under the protection of parliamentary privilege. Therefore, I request that witnesses focus on the issues raised by the inquiry's terms of reference and avoid naming individuals unnecessarily. Witnesses are advised that any messages should be delivered to Committee members through the Committee staff, including documents for tabling. Finally, mobile phones are to be turned off—no exceptions. If anyone wishes to make a phone call, please leave the room. I welcome our witnesses.

BARRY BUFFIER, Chair and Chief Executive Officer, NSW Environment Protection Authority,

MARK GIFFORD, Chief Environmental Regulator, Regulatory Services Division, NSW Environment Protection Authority,

FRANK GAROFALOW, Manager, Metropolitan Infrastructure, NSW Environment Protection Authority, and

SARAH LOW, Project Officer Governance, NSW Environment Protection Authority, on former oath, and

MATTHEW LANCE RILEY, Director, Climate and Atmospheric Science, Office of Environment and Heritage, affirmed and examined:

CHAIR: Mr Buffier, before questioning commences, would you or any of your colleagues like to make an opening statement?

Mr BUFFIER: Thank you. I certainly would like to make an opening statement if I could.

CHAIR: Please proceed.

Mr BUFFIER: It will take about 10 minutes.

CHAIR: That is fine.

Mr BUFFIER: Thank you. Thank you for providing the EPA with the opportunity to present information at this third hearing. I would like to briefly introduce the work the EPA has done in relation to air pollutants generally in New South Wales, focusing on the Hunter region, as well as addressing the contentious issues surrounding the control of air emissions from coal trains. The EPA has long recognised community concerns about air quality in this region, and the management of air quality, particularly in the Hunter, continues to be at the forefront of EPA priorities. Much of our work goes back six, eight or 10 years. I particularly want to mention that over the last two years the NSW EPA has been chairing a national approach to improve air quality via review of the particle standards in the Ambient Air Quality National Environment Protection Measure—otherwise known as NEPM—which is now coming to fruition. The impact statement for the review was released in July this year.

The review has pulled together a vast amount of analysis, and I specifically want to bring to your attention the Health Risk Assessment that was completed as part of this review. That assessment reinforces the view that the most significant health impact of air particles is long-term exposure to PM 2.5 size particles. On behalf of the other States we are currently reviewing nearly 150 submissions about what are the appropriate standards for particulate matter and a decision on this review is expected to be discussed by State and Commonwealth Ministers in 2015. At the State level we have also been very busy on air quality issues because we know from the Office of Environment and Heritage air quality monitoring network that the upper Hunter in particular is starting to reach, or in some cases exceed, the air quality NEPMs. For example, Muswellbrook over the last three years has had a PM 2.5 reading of between nine and 10 whereas the national advisory level is eight.

In part, that was the catalyst for the EPA establishing and sharing a high-level interagency taskforce on air quality in the Hunter: to drive a whole-of-government response to community concerns about air quality in the region, provide information to local communities on air quality and reduce particulate matter emissions from coalmining. In addition to that work, we have had a significant increase to our recurrent budget. The Government has allocated the EPA a further $8 million over three years for air projects. This is currently funding 18 programs focussed on understanding and improving air quality across New South Wales. Of these programs, eight are specific to the Hunter, and a further three are specific to coalmining and transportation. I would like to table a list of those projects.

Document tabled.

To highlight just a few, and very quickly, we have our air quality monitoring network as I have said. It is the largest in Australia with 43 monitoring stations, and the Hunter region is the most intensively monitored

region in Australia with 14 continuous air quality monitors located strategically throughout the upper Hunter and six in the lower Hunter.

We are undertaking particle characterisation studies in both the Upper Hunter and the Lower Hunter by the Office of Environment and Heritage [OEH] and the Environment Protection Authority [EPA]—some of those results we have—which have contributed to our understanding of the sources of air pollutants in the region. We have a Dust Stop program that focuses on best practice for open-cut coalmines to reduce air emissions, which is enforced through the EPA's on-site regulation of coalmines, including a regular program of unannounced inspections. Diesel emissions from vehicles and equipment that are used in industry, especially mining are the focus of our non-road diesel emissions strategy, which includes an initiative targeting coalmine non-road diesel engines, haulage trucks and heavy machinery.

A number of EPA programs target other major emission sources or emerging issues in the Hunter region, such as the Wood Smoke Reduction Program, funding a number of councils, including Muswellbrook and Singleton to reduce winter wood smoke, which is a major contributor to particle pollution in the Hunter; vapour recovery at service stations to reduce emissions of volatile organic compounds that contribute to ozone pollution, which is a particular problem in Sydney; and a fugitive methane study to measure emissions from a number of natural and industrial sources. The EPA has recognised the importance of engaging with its stakeholders to ensure open communication on these issues.

In the Hunter region, the EPA coordinates a number of community advisory committees to enable local communities to engage with Government, industry and other key stakeholders on local air quality issues. For example, the Newcastle Community Consultative Committee on the Environment [NCCCE] brings together government, industry and the community and provides a forum to identify important environmental and amenity issues associated with nearby industrial activities. This committee provided advice on establishing the Newcastle Local Air Quality Monitoring Network—I think the committee heard some evidence from them this morning—and has also provided advice on many other EPA air quality related projects.

I would like to turn now to the specific terms of reference for the inquiry that requires an examination of the EPA's investigations and public statements about the effects of coal dust pollution in the Hunter. Concerns on this issue have centred around the question of whether covering loaded coal wagons would significantly stop or reduce particulate emissions from coal trains in the Hunter rail corridor. Let me provide some context. The question that the EPA seeks to answer is similar to any that we ask in relation to any emission source of pollutants. The EPA wants to know: What is the most effective and efficient means of reducing particulate emissions along the Hunter rail corridor and will this improve air quality in the Hunter? The question would enable us to determine where covering of coal trains would rank in our priorities, amongst other activities. The EPA's approach to any environmental issue is evidence-based. In this case we required the rail operator, the Australian Rail Track Corporation [ARTC], under three separate pollution reduction programs, to undertake studies associated with covering coal wagons as a means of managing air emissions.

The outcome of these reports as well as the independent peer review by Professor Louise Ryan of the University of Technology, Sydney of the final report, the Katestone report, is that there is no statistical difference in the level of particulate matter associated with loaded and unloaded coal trains and other freight trains. Interestingly, Professor Ryan's independent review also highlighted that diesel fuel used by trains is the likely source of the smaller size of particles, PM2.5. This is the focus of continuing work by Professor Ryan, and I will expand on this. While PM2.5 has been a key focus of the EPA's work in air quality because of its greater health impacts, the EPA is also concerned with the impact that larger particles, especially dust, can have on people's health and quality of life.

The EPA is currently examining operational practices along the coal chain from mine to port to identify opportunities for improved environmental performance. We are undertaking an audit and review of the practices in the coal freight supply chain focusing on coal loading, unloading and transportation from coalmine to port. We have inspected coal train loading and unloading facilities in Queensland to examine their coal dust management practices, including the use of veneering on loaded coal wagons to reduce dust. We have examined the available options for rail system dust mitigation and its cost and we have assessed rail system operator management practices relevant to this issue.

I would like to make a few remarks regarding the perceptions held by some community groups relating to the integrity of the process surrounding the Katestone report. The first point is that the Katestone report was not a report of the EPA. It was a report prepared by Katestone and commissioned by ARTC under a pollution

reduction program required by the EPA. The EPA reviewed the report in draft, which is usual practice to ensure quality control and to determine whether the report meets the requirements of the pollution reduction program. In reviewing the draft, the EPA identified a number of inadequacies in the report, requesting that Katestone provide further details and resolve inconsistencies in the data. As a result, a number of findings were amended by Katestone but, crucially, these changes did not alter the overall conclusion of the report that there is no appreciable difference between the dust levels associated with the movement of loaded coal trains, unloaded coal trains and other types of freight trains.

The EPA engaged Dr Luke Knibbs to independently peer review the report. The review identified problems with the statistical analysis. On the advice of the chief scientist, as I have said earlier, we engaged Professor Louise Ryan to independently review the statistical analysis of the report and re-analyse the data. Professor Ryan confirmed that there is no statistical difference between the level of particulate matter associated with loaded and unloaded coal trains and other freight trains. This is consistent with every public statement that the EPA has made. She also found there was a statistically significant increase in particulates from loaded and empty coal trains and freight trains compared with background levels of about 10 per cent and suggested a correlation with the use of diesel fuel in the locomotives.

The EPA considers that the science it undertakes, commissions or requires to be undertaken, and upon which we base our decisions, should meet widely accepted standards of scientific rigour. To ensure this occurs, the EPA has adopted the scientific rigour position statement developed by the OEH in July 2013. At no time has the EPA deliberately mislead or misinformed the community. We have been consistent in our statements and we believe those statements still apply. What have we learnt from this vexed issue? We recognise that by not explaining our processes clearly and not communicating clearly in our public statements on the results of the studies, this has aroused a level of distrust in parts of the community. We could have done better in terms or our communication. In response, the EPA has and continues to strengthen its engagement and communication by being more proactive in sharing information with the community; directly involving the community in problem-solving for this issue, such as through the NCCCE, and communicating with more technical precision but also providing the context in identifying where research findings fit in with the EPA's work program for addressing air quality in the Hunter. Thank you very much for the opportunity to present some opening comments.

Dr MEHREEN FARUQI: Thank you for coming and for showing us around the site this morning. We really appreciate it. Mr Buffier, I would like to start off with the reporting of the results of the monitoring of coal dust. In some of the email correspondence that came out through the Government Information (Public Access) Act requests, there was some concern about the peer review of that report. For example, on 24 May 2013 the EPA director Giselle Howard directed staff to commission a peer review of both ARTC reports. There is an email with your reply, which says, "I would prefer to release the report on time." Then an EPA officer advises that it would be best for the report to be released on time even if the peer review is incomplete rather than varying the EPA to delay release for the sake of a peer review. "I think there is potential for damaging media and community backlash if the report is delayed in order to undertake an independent review." Being an engineer and a scientist, I understand that the peer review is critical before reports are released. I am wondering what happened in this process. Should a peer review not have been commissioned before the report was released?

Mr BUFFIER: Ideally, I would agree with you on that position. We had some peer review type process within OEH and EPA. At this stage we had not long separated from OEH and we tended to operate fairly loosely as a team still and people within OEH and EPA had done a review of the work. I went to a meeting and I said, "Are you clear in your own minds that this meets the requirements that we should meet?" and I was given the answer, "Yes." I said, "Well that's good because subsequent to this I would like a peer review just to see if the process we have gone through was actually okay." So I never at any stage thought of the peer review as being something that was necessary to prove that the report was okay. It was a check to see—I was fairly new to this process—that we were doing things properly. That explains why I was saying that the peer review might occur afterwards because I was more concerned about our processes internally.

Dr MEHREEN FARUQI: This morning we heard that some mistakes were made. We know now that the statistical analysis was not quite correct. There was some faulty monitoring—a monitoring station at Mayfield was faulty and there were some results that were monitored while it was raining. Looking back on all of those things, how has the EPA improved its processes so that those kinds of things never happen again?

Mr BUFFIER: I think the review by Dr Luke Knibbs found that there were not any substantial problems with the methodology or the approach, the main problem was around the statistical analysis.

Dr MEHREEN FARUQI: So the monitoring station was not faulty and it is also my understanding that some of the monitoring was done during a period when there was rain falling?

Mr BUFFIER: I will ask Mr Garofalow to deal with that, but the first report was done during a very wet period and those particular levels of results were very low. At the time we said, "That is probably not representative; we need to do it at a different time." We also had two monitoring stations in the first report and we cut that back to one because there were some problems with the Mayfield site. I will just ask Mr Garofalow to make any further comment on that.

Mr GAROFALOW: Just to expand on what Barry has said, we undertook the first monitoring process and, as Barry mentioned, it was actually unseasonably wet for that period and there was a possibility that rainfall could have suppressed dust. So recognising that, we wanted to create worst-case scenario so we could get the best results we could in terms of what the worst case would be. That is why we chose to rerun the study in a period when it was hot and dry and it would be most likely for dust to be created. The issue around the second site—originally, as Barry mentioned, there were two sites we undertook the monitoring at—there was a problem. There was nothing wrong with the actual monitoring of the dust, we got very good data on the dust monitoring, but there was an issue with one of the sites in terms of actually monitoring the trains as they passed by, which is a critical part of the study—we needed to link the dust level to the trains.

At one site in both the first and second studies that functioned very well, because there is a wayside monitoring point set-up for exactly that and it can tell you exactly what train is going by at what time. At the first site, the one that was chosen to not be included in the second study, there were some problems in making sure that it was coordinated. So we had good data on the dust but probably not to our level of satisfaction was the linkage to trains. So we made the decision, after much consideration, to not include that in the second study but because we had such a significant amount of data, in terms of the number of train passages, the actual quality of the data far outweighed the loss of having multiple sites. So having a single site was considered—and this was confirmed by Louise Ryan when she was undertaking her work; she said this was one of the biggest data sets she had ever had to work with—as the amount of information we had was significant and the fact that we had so much information from a single site made that statistically valid because there was quite a lot of data.

Dr MEHREEN FARUQI: Mr Buffier, you mentioned earlier that at the moment there are 16 air quality monitoring stations in the Hunter. Are any of those in rail corridors where these trains pass?

Mr BUFFIER: I will ask Mr Riley to deal with that question. The answer is none of them are in the rail corridor per se but they are very close. If you look at the nature of PM2.5, which travels very long distances—we pick up sea salt in Singleton and Muswellbrook, for example—proximity to the rail corridor is not in itself an issue. But one of the extra projects that we have at the moment is a dust deposition study in the rail corridor itself and I will just ask Mr Riley to tell you where they are located.

Mr RILEY: Mr Buffier is right, none of our monitoring stations are located within the corridor but we do have stations close to the corridor, the closest being our Beresfield station. The Beresfield station is located approximately 300 metres from the rail corridor. This station measures PM10 and PM2.5—it has actually measured PM2.5 for around about 20 years. What we do see at that station is that while the levels are slightly higher than elsewhere in the lower Hunter, they are not appreciably higher than other sites where we measure PM2.5.

Dr MEHREEN FARUQI: When the ARTC were doing their study there were monitors in the rail corridors. Given that it is such a community concern, should not the EPA have monitors in the rail corridors so it can gather more data?

Mr RILEY: When we design our air quality monitoring networks one of our fundamental aims is to ensure that we position the monitoring stations so that they collect data that is representative of exposure to air pollutants for the general community. We actually choose locations that are away from main point sources or, as in this case, line sources of pollutants because what we are interested in is not measuring what the ambient air quality is right next to the source; it is measuring what it is within the community. That is the approach that we take.

Mr BUFFIER: Could I also comment on that? The absolute levels of these measurements that we are getting are below the NEPM standards anyhow so I think the context of this is—when we look at the first study, for example, PM2.5 at Mayfield ranged from 5.9 to 6.5 and the NEPM advisory level is 8. If we look at the later studies they are around 10 whereas the daily average for NEPM is 25.

Dr MEHREEN FARUQI: It is my understanding that at the moment there is no safe recommended level of PM2.5 ingestion. Would you agree with that?

Mr BUFFIER: I have referred to the health study that we have done, which does demonstrate the health effects of air particles. What that shows is that there is pretty much a linear relationship. So any reduction that you can achieve in particles brings about a consequent benefit in terms of health. Now once you get down below an average of eight there is not a lot of data in the world that sort of relates that directly to health because they are not a lot of places in the world that achieve that on a consistent basis. So the standards we have in Australia, or the advisory levels, are the most stringent in the world. But, yes, there are health benefits and that is why I have brought to the Committee's attention the work that we have already done.

The Hon. LUKE FOLEY: Could I start with your submission and ask for an update on the current EPA activity, in particular the audits. I note in your submission you indicated that you expected them to be completed by the end of September. Are those audits now available?

Mr BUFFIER: Not quite, but I will ask Mr Gifford to give you an update on that.

Mr GIFFORD: The audit process has been completed in that each of the audits has been undertaken on each of the sites. The audit process is quite rigorous. We undertake an analysis of compliance with the activity concerned and legislative instruments, licences that are in place, and we also look at what other practices are being undertaken and whether or not they are best practice, and compare and contrast sites that we audit. Following that process we then gather all the information together and have some initial draft reports, which are then provided to the entity that has been audited, and we get their response to that. We then formalise an action plan associated with each of those audits at the individual sites. Once we have done that, we pull all of that information together into a single report that covers the whole audit process. We have not gotten to that end point yet. We are still working our way through the finalisation of the individual audits but we expect to be able to have that available before the end of the year.

The Hon. LUKE FOLEY: Where are you heading on monitoring coal loss from trains? Do you expect to make some definite decisions in that respect?

Mr GIFFORD: The audit program is part of the information that will feed into an evidence base about what regulatory changes or reforms the EPA thinks are appropriate in terms of dealing with any of the particular impacts that have been observed or any of the issues that have been raised through the audit program. So I think it is probably a little premature to be finalising a position at this point.

The Hon. LUKE FOLEY: Do you think you will have any decisions on courses of action to share with this Committee before we conclude our work in February?

Mr BUFFIER: Certainly if we do we will provide an update, yes.

The Hon. LUKE FOLEY: Let us go back to a vexed issue, as you put it Mr Buffier. Am I being fair in summarising the position of the Environment Protection Authority as, first, there is a statistical increase in particulates from all trains compared with background levels; and, secondly, there are no statistical differences in particulates from covered coal wagons, uncovered coal wagons and other freight trains? Is that a fair summary of the EPA's current position?

Mr BUFFIER: With a slight correction. We don't have covered coal trains, we have loaded and unloaded coal trains. I think that is what you were referring to.

The Hon. LUKE FOLEY: Yes.

Mr BUFFIER: That has been our position, yes.

The Hon. LUKE FOLEY: Who would have prepared answers to questions on notice to former Minister Robyn Parker surrounding these issues? I am thinking in particular of questions asked by my colleague Peter Primrose.

Mr BUFFIER: What particular questions? If you tell me the particular questions I might be able to help you.

The Hon. LUKE FOLEY: I am looking at March and April 2013. On 12 March the Hon. Peter Primrose asked some questions of then Minister Parker about the ARTC study and her responses were dated 2 April. Are you aware who would have provided that information?

Mr BUFFIER: Was that in relation to the health issue?

The Hon. LUKE FOLEY: In particular I am interested in the statement in the then Minister's answer to the Hon. Peter Primrose which said, "No significantly elevated levels of coal dust have been detected at either of the ARTC monitoring sites."

Mr BUFFIER: That is the first study. I cannot tell you exactly who may have prepared it but I suspect that I would have signed off on it. I would have to look back through the notes on that but I think the question relates to the health impacts. Could you help me with the question itself, please?

The Hon. LUKE FOLEY: Can I put it this way: Do you stand by the statement that no significantly elevated levels of coal dust have been detected at either of the ARTC's monitoring sites?

Mr BUFFIER: Yes. My recollection is that that, in part, related to the health impacts, and yes I do think that statement is correct because the figures that I was just quoting to Dr Faruqi indicated that for PM2.5 the levels ranged from 5.9 to 6.5. The daily level is 25. In an absolute sense you would have to say that is not elevated.

The Hon. LUKE FOLEY: But at the very same time OEH science had provided the EPA with a six-page report identifying "a very strong relationship between train passage and a spike in air particles". That contradicts the Minister's advice to Mr Primrose in her answer to his question surely.

Mr BUFFIER: No, it does not. The spike relates to a brief passage of time. What we are talking about here is what were the readings when—

The Hon. LUKE FOLEY: So a spike is not an elevated level?

Mr BUFFIER: A spike is an elevated level but if we are talking about what was the reading for those trains during their passage, we are talking no trains at Mayfield, 5.9 for PM2.5, and loaded coal trains 6.4 against a NEPM daily average of 25. They are not elevated levels.

The Hon. LUKE FOLEY: They are spikes but they are not elevated levels?

Mr BUFFIER: It is not elevated when you look at the standard, the NEPM standard. We are talking in absolute terms here. Is the whole passage of a coal train associated with a significant elevation? The answer is no. The diesel locomotive is possibly responsible for part of that spike, but we are talking about what were the levels during the passage of the train.

The Hon. LUKE FOLEY: Mr Shannon from the OEH deals with the passage of the train. On page 69 of his review he says, "Traces show a very strong relationship between train passage and a spike in air particles".

Mr BUFFIER: Yes.

The Hon. LUKE FOLEY: That contradicts an answer from your then Minister to a member of Parliament, does it not?

Mr BUFFIER: No. I think the question related to health impacts to start with and the statement—

The Hon. LUKE FOLEY: I am not interested in the question; I am interested in the Minister's answer to the Parliament where she made a statement to another member of Parliament that said, "The first study did not identify elevated levels of coal dust".

Mr BUFFIER: Correct.

The Hon. LUKE FOLEY: That statement does not stand up in light of the comments of your scientific advisers, does it?

Mr BUFFIER: The statement is correct: they are not elevated levels.

The Hon. LUKE FOLEY: They are spikes but they are not elevated levels? You are playing with words, are you not?

Mr BUFFIER: Are you talking about the passage of the train or are you talking about a four-second transit? Or were they six seconds, Mr Garofalow, the measurements?

Mr GAROFALOW: It varied depending on the train, but yes, a short period.

Mr BUFFIER: Yes you did have spikes but when you looked at the—

The Hon. LUKE FOLEY: But they are not elevations.

Mr BUFFIER: When you looked at the passage of the train—what we are trying to do is to give a representation of what impact would that have on human health and the assessment by Health was that they were not elevated levels in relation to human health. My recollection is that that is what the question was about too.

The Hon. LUKE FOLEY: Mr John Klepetko from the Air Technical Advisory Services Unit reported "ATASU"—that is, the Air Technical Advisory Services Unit—"notes that a statistical analysis of the monitoring data has demonstrated a statistically significant elevation in PM concentrations associated with trains passing the Metford monitoring station. This finding supports the statement that trains operating on the Hunter Valley rail network are associated with elevated particulate matter concentrations". So your own scientific adviser, Mr Klepetko, tells you that elevated levels were present.

Mr BUFFIER: Our own independent reviewer, Professor Louise Ryan, in a very significant and detailed statistical analysis, put the increase at 10 per cent. I would not regard that as elevated.

CHAIR: Thank you, Mr Foley. We will move on to Mr MacDonald.

Mr SCOT MacDONALD: Mr Buffier, in your introduction, and I did not quite hear the answer, you started to speak about threats to the environment and to human health. How would you rate coal dust from trains relative to all the sources that we are aware of?

Mr BUFFIER: I would like to go back to the comment I made to Dr Faruqi that we are well aware of the health impacts of air quality, particularly particle levels, on health and we are well aware that in some parts of the Hunter we are up to or slightly exceeding some of the air particle levels that we would like to achieve. If we want to reduce those levels then we need to look at where we aim to get the best bang for our buck; what is likely to give a significant improvement. Our assessment has been, from the ARTC's work, that covering coal wagons would not be likely to give a significant improvement to PM2.5. Why is that? There are a number of reasons.

One is that PM2.5 is created by combustion, not mechanically. PM2.5 travels very long distances, so we would expect it to be picked up across the whole of the air monitoring network. We have had 11 years of ANSTO data on a site at Mayfield on particle characterisation, which does not indicate that coal dust is a significant contributor to PM2.5. Sea spray comes out at about 16 per cent. The maximum contribution that coal dust could make, if you thought that it included all of the categories represented by soil or by industry, is 14 per cent. The Upper Hunter Particle Characterisation Study shows that wood smoke is much more significant in terms of its impact on PM2.5. Veneering of coal wagons in Queensland appears to have had no impact on PM2.5 or PM10 and, importantly, when we looked at loaded coal trains versus freight trains, if PM2.5 or PM10

is coming off the top of a coal train then we would expect that monitoring to show a significant increase in levels over freight trains. We have not been able to find that in any of the data to date.

We are not saying that this is not an area for concern, but what we are saying is that the covering of coal wagons is unlikely to yield a result. We have put a lot of time and effort in these other 18 projects into looking at some of the other areas. We have done a lot of work on diesel over the past few years. Non-road diesel engine standards—there are no standards in Australia, there are no uniform standards. In New South Wales we are trying to take the lead on this. We will probably act unilaterally in this regard and look at imposing some standards on non-road diesels; so that would apply to diesel locomotives, all the mining equipment and shipping.

CHAIR: Could you explain the acronym ANSTO please?

Mr GIFFORD: The Australian Nuclear Science and Technology Organisation.

Mr SCOT MacDONALD: There is an assertion in one of the submissions that ARTC is in breach of its pollution licence. Do you believe that is the case?

Mr BUFFIER: No, we do not. We have had a look at that carefully and we do not believe they are in breach of their licence.

Mr SCOT MacDONALD: Is Newcastle's air quality improving or deteriorating?

Mr BUFFIER: I would like Mr Riley to make a comment on that, but air quality in Australia overall, and New South Wales in particular, has been improving over a large number of years, but we do have some hot spots: ground level ozone in Sydney is one of them, air quality because of particles in the Hunter is another. I will pass to Matt to comment.

Mr RILEY: We have operated continuous air quality monitoring in the lower Hunter region in particular for over 20 years and we have seen a marked improvement in air quality in the lower Hunter.

Mr SCOT MacDONALD: Over what period?

Mr RILEY: Over 20 years. Levels of ozone, nitrogen dioxide, sulphur dioxide, carbon monoxide and lead have reduced; they are now below national standards and in many instances well below the national standards. As Mr Buffier said, we do have exceedances of the particle standards from time to time. Often levels of particles are heavily influenced by the annual variability in the climate. The peak years of particle pollution coincide with drier weather where we have increased bushfire activity and also dust storms. If you look back over the 20-year record from stations such as Beresfield and Wallsend, we see that for the vast majority of years levels of PM2.5 are well below the national advisory reporting standard. There are some years that you exceed that standard; they are generally years when we have dry conditions and bushfires.

In the Upper Hunter we have been running the Upper Hunter Air Quality Monitoring Network now for three years. That is probably too short a period to infer trends, but what we do see is that levels of PM2.5 in Muswellbrook are higher than elsewhere and the Upper Hunter Fine Particle Characterisation Study clearly indicated that residential wood fires—wood smoke from home heating—is a large contributor to PM2.5 pollution in Muswellbrook, but also significant.

The Hon. Dr PETER PHELPS: I want to move to the submission from the Hunter Community Environment Centre. Firstly, I will start off with the elephant in the room. It contends that "the EPA systematically misrepresents the findings of pollution monitory studies and has acted to obscure the conclusion of the reports that coal trains cause a significant amount of particle pollution with directly attributable impacts on community health". Has the EPA systematically misrepresented the findings of pollution monitory studies?

Mr BUFFIER: Certainly not. As I said in my opening comments, we have consistently stated that the studies have shown no statistical difference in particle levels associated with loaded coal trains, unloaded coal trains or freight trains.

The Hon. Dr PETER PHELPS: If I can go to Mr Riley for a moment on the technical side of things. The submission deals with PM10 and associated transiency. One part of the report speaks of increases in PM10 of between 94 and 1,210 per cent. Have you seen that material and would you care to comment on it?

Mr RILEY: It is important when you look at increases in pollution that you look at the time signature. In answer to one of the earlier questions Mr Buffier related to the 24-hour average for PM2.5. The standards for particulates PM10 and PM2.5 are a 24-hour average. Over shorter periods, down to six seconds for these train studies, you can see very large spikes in pollution. That does not necessarily relate to elevated levels over that reporting period. So short spikes over a few seconds do not necessarily mean that you will have an elevated level over one hour, four hours, six hours, 24 hours. You can see large spikes in pollution but it is what it means over a longer term that is important.

The Hon. Dr PETER PHELPS: Are you familiar with Osiris air quality monitors?

Mr RILEY: Yes.

The Hon. Dr PETER PHELPS: Could you explain whether you consider them to be appropriate devices to use to make air quality assessments for matters such as coal dust?

Mr RILEY: The Osiris monitors are a monitor that gives you an indication of levels of particulate pollution. I would like to say that the Osiris monitors are not national standard monitors. So you cannot use the Osiris monitors to measure levels of PM10 or PM2.5 and compare them to the national reporting standard or the national NEPM standard.

The Hon. Dr PETER PHELPS: Would it be fair to say that the Osiris monitors would be manifestly less accurate than those currently run by the EPA?

Mr RILEY: Yes.

The Hon. Dr PETER PHELPS: To a significant degree?

Mr RILEY: I would not like to comment on the significance at this stage. We would need to conduct a thorough side-by-side evaluation over many years to be able to make absolute statements of their significant difference. What I can say is that the monitoring instruments operated by the Office of Environment and Heritage are Australian standard monitors. They are very accurate and they are precise monitors.

CHAIR: As a point of clarification, what is the frequency for calibration under the Australian standard?

Mr RILEY: It varies depending on the method. For example, with the PM10 monitors that we use a technique called Tapered Element Oscillating Microbalance [TEOM]. These instruments are instruments that we look at constantly. They are corrected for temperature and pressure variation, which affects the mass measurements. Routinely every three months they go through a thorough calibration. We check the flows through the instruments. We ensure that they are operating at their optimum.

CHAIR: Is that done internally or do you use an external National Association of Testing Authorities [NATA] accredited laboratory to do that?

Mr RILEY: We are NATA accredited. The air quality monitoring networks operated by the Office of Environment and Heritage [OEH] are NATA accredited.

CHAIR: Thank you; that answers my questions.

Dr MEHREEN FARUQI: We have a bit of a discussion about PM2.5 particles but of course we know that PM10 particles as well have quite significant health impacts. In your submission on page 181 it states that larger particles, such as coal dust—the larger visible particles known as total suspended particulates [TSP]—can cause amenity issues for the community. That implies to me that there are no health impacts related to coal dust or total suspended particulates as you understand it. Is that correct?

Mr BUFFIER: It would be a brave person who said there were no health impacts. But certainly the health impacts are most pronounced at PM2.5. There are certainly health impacts at PM10. As the particle size gets bigger, because you can aspirate them, they become much less significant. But I am not qualified to speak on the precise health impacts.

Dr MEHREEN FARUQI: Has the Environment Protection Authority [EPA] been liaising with the department of health?

Mr BUFFIER: Yes, all the time.

Dr MEHREEN FARUQI: Have you done any studies on the health impacts of these particles?

Mr BUFFIER: No, we have not done any studies. But one of the authors of the report that I was talking to you about is Dr Richard Broome, who works for health. He is a member of our interagency task force, or he substitutes for Dr Wayne Smith. So, yes, we do have a lot of engagement with health on these issues.

Dr MEHREEN FARUQI: Moving back to the issue of the covering of coal wagons, whether loaded or unloaded. A Federal Senate inquiry in August 2013 into the impacts on health and air quality in Australia recommended that States and territories require industry to implement covers on all coal wagon fleets. I also came across an Office of Environment and Heritage manual from 2011 which suggested that using tarps or lids, and also washing the wagons, would actually reduce coal dust emissions by 99 per cent. Yet I guess your view is that that would not make a difference. The NSW Minerals Council is investigating the veneering of coal wagons rather than the covering of coal wagons. Could you elaborate a bit on that?

Mr BUFFIER: What we have tried to do is to look at what evidence there is as to how beneficial this would be. That is why we have required the Australian Rail Track Corporation [ARTC] pollution reduction programs to look at the impact of different types of trains. If it is coming off the top of a loaded coal wagon then on the passage of that train you would expect to see significantly higher dust levels than you would for a freight train. That is not showing up. So it makes you ask the question: where is the 10 per cent elevation of the dust coming from? Is it caused by coal dropping through the bottom of wagons? Is it caused by diesel? Is it caused by dust off the top of the wagons?

Dr MEHREEN FARUQI: Do you believe that the previous OEH recommendation and the Senate inquiry recommendations were made without any evidence?

Mr BUFFIER: I did have a look at the Senate inquiry recommendations and I could not see any scientific evidence for those conclusions. Importantly, I could not see any attempt to determine what the benefits to air quality would be if that occurred. The OEH issue I am not aware of.

Dr MEHREEN FARUQI: We also heard this morning during our site visit Mr Garofalow suggest that coal falls through the bottom of the wagons. Is the EPA working with industry to try to improve that in some ways?

Mr BUFFIER: We are certainly looking at how significant that might be as a contributor. I think it does highlight the fact that if we had gone down the path of covering wagons on the evidence that we have to date then we would have a very disappointed community if it transpires that it is dust falling out the bottom of wagons that is causing much of the problem—as well as having expenditure on things which are not going to be effective. One of the things I have learnt over a long period of time is that as a regulator if you are making people do things which do not have any effect and which cost a lot of money to do then the community gets very disappointed with you and the industry you are regulating gets very disappointed. So I am very careful to have good evidence behind that. To your point, that is the reason we are doing the audit. We do not have a closed mind. We would like to stop any dust associated with coal trains. We are looking at veneering. It is a possibility. Veneering might solve the problem. But if the problem is dust falling out the bottom of the wagon then veneering is only going to have an impact for half of the journey.

The Hon. LUKE FOLEY: Mr Buffier, Dr Ian Shannon from OEH science wrote on 27 September 2012, and I quote:

> The data suggests a difference between train and no train

Do you stand by your Minister's answer, which you signed off on, to a question asked by the Hon. Peter Primrose where the Minister states that the first study did not identify elevated levels of coal dust. Do you stand by that answer?

Mr BUFFIER: Yes, I do. When you look at the absolute levels, and I have quoted them to you, they are not elevated levels.

The Hon. LUKE FOLEY: Leanne Cross from the ARTC emailed one of your officers in the EPA, writing that, and I quote:

> A review has shown that there is a statistical difference for train types for PM2.5 at Metford.

In light of that, why did you then issue a media release straight after that advice stating that there is no appreciable difference between the dust levels measured from the movement of loaded coal trains and other types of freight trains?

Mr BUFFIER: Because that is what the study showed; they were the conclusions of the study.

The Hon. LUKE FOLEY: A study which your scientists said was deeply flawed.

Mr BUFFIER: Are you saying that we made the findings more or less favourable?

The Hon. LUKE FOLEY: ARTC had emailed Mr Ben Trehearne, your regional operations officer, not 24 hours prior to say that ARTC acknowledged, in their words, "a review has shown that there is a statistical difference for train types for PM2.5 at Metford". Yet you still issued a press release that pretended otherwise, why?

Mr BUFFIER: If you would like to go to the conclusions of the report, I will talk you through each of them.

The Hon. LUKE FOLEY: Let us go to another one of your scientists.

Mr BUFFIER: No, let us go to the conclusions. What I am talking about is what were the conclusions of the report and what did we say as a result of those conclusions. Everything we said is consistent with the report.

The Hon. LUKE FOLEY: Which your own scientists in OEH and the EPA said was deeply flawed. You chose to ignore the expert advice of Dr Ian Shannon, Tony Savage, Dr John Klepetko, as well as the commentary from Leanne Cross of the ARTC and simply proceed with releasing to the public the message you wanted to send out—that everything is okay. That is the case, is it not?

Mr BUFFIER: Why would I want to send that message? What motive would I have in sending that message?

The Hon. LUKE FOLEY: I am asking you why you ignored advice from Dr Ian Shannon, Tony Savage, Dr John Klepetko and Leanne Cross. Why did you choose to ignore their advice and run with an initial study report that your own scientists said was deeply flawed? What did you do that?

Mr BUFFIER: Because there was consideration of this issue given by not just those people but by a range of people. Some of the comments you are quoting are comments on draft reports—that is my understanding.

Mr GAROFALOW: Yes, that is correct.

Mr BUFFIER: And the final report was changed—it was not that draft report. So it is a matter of where in the continuum of the process you are quoting from. I am quoting based on what was the final report. I am quoting from Dr Luke Knibbs, who did an independent review and found no problems with the methodology. I am quoting from Professor Louise Ryan, who spent weeks on further statistical analysis.

The Hon. LUKE FOLEY: You could not have been quoting from her when you issued that press release because she had not been commissioned then.

Mr BUFFIER: I was not quoting from her then; I was quoting from the report that Katestone did for ARTC.

The Hon. LUKE FOLEY: Which your own scientists said was deeply flawed. Dr John Klepetko from the Air Technical Advisory Services Unit [ATASU] wrote:

> Several finding appear to be incorrect. The report states that there was no statistically significant difference in concentrations of TSP, PM10 and PM2.5 between train types. However based on the data presented in Figures 7 and 8 and Table 9 there is a statistically significant difference in TSP and PM10 concentrations between unloaded coal trains and passenger trains.

Why did you ignore advice from people like Dr John Klepetko, one of your scientific experts?

Mr BUFFIER: I do not think we did ignore the advice; I think that advice was provided to ARTC and subsequent changes were made to the report.

The Hon. LUKE FOLEY: Why were those comments, many of which I have quoted today from Dr Ian Shannon, Tony Savage, Dr John Klepetko and Leanne Cross—from OEH, EPA and ARTC—not shared with the public? Why did you choose only to run with one very clear and ambiguous message—that there was no problem with particle pollution from coal trains?

Mr BUFFIER: Because what you are seeing is the process by which we arrived at the final report. The final report we were comfortable with. That is what I quoted from.

The Hon. Dr PETER PHELPS: Further to a number of comments which were made in the Hunter Community Environment Centre submission, there seem to be some inferences drawn from the fact that "the EPA prepared a media plan before seeing the report". Is that unusual for the EPA?

Mr BUFFIER: The EPA normally is asked for comments as soon as a report is released. So we take the precaution of having a media release drafted, sometimes that needs to be signed off jointly by us and health and other organisations. It is not unusual; in fact it is common practice that we would draft a media statement.

The Hon. Dr PETER PHELPS: Another allegation in the submission is:

> The EPA decision not to require ARTC to monitor at more than one location in their second study (dropping the residential suburb of Mayfield) was made to satisfy ARTC. The company anticipated costs of $25-50,000 to install a wayside monitor.

Was that decision made to satisfy ARTC? And was it done on the basis of financial grounds?

Mr BUFFIER: No, the decision was not made to satisfy ARTC. I think Mr Garofalow explained earlier that it related to clarity around being able to identify which trains were going past that point.

The Hon. Dr PETER PHELPS: Also the submission from the Hunter Community Environment Centre raises concerns that there was a large number of discrepancies between the draft second report and the final second report and that 15 of the report's 18 conclusions were changed. Were you aware of this and did you have any significant concerns about this upon learning of it?

Mr BUFFIER: I was aware that we had made comments on the draft report, where we wanted things clarified. In doing Katestone found a problem themselves. They are on the public record as saying what that was. But the point I would make is that it did not change the main conclusion of the report—that is, there was no statistical difference between particles associated with loaded coal trains, unloaded coal trains and freight trains.

The Hon. Dr PETER PHELPS: Just to clarify, and that was confirmed by Professor Ryan

Mr BUFFIER: Correct.

The Hon. RICK COLLESS: Mr Buffier, can we go back to the issue of the elevated levels and what constitutes a spike in the levels. Is it the absolute level of the spike or a combination of the absolute level of the spike and the time that the elevated level exists? I think Mr Riley spoke about a few seconds where it was up and then it was gone again. How do you define a spike in those terms?

Mr BUFFIER: I did not define a spike. What we have focused on in our report is what is the elevation or what is the level during the time the train is passing. The spike might have occurred right at the start when the locomotive was there or the spike might have occurred if someone goes past with a lawnmower. So you can have a spike there for a very brief period of time. But, as Mr Riley said, in terms of health impacts it depends on the time, and the National Environment Protection Measure [NEPM] levels relate to daily exposure and annual exposure. There is no real evidence about linking a short-term spike to a health impact. I am not saying it does not exist but I am just saying that you cannot measure a health impact against that. It has tended be against what are the daily levels and what are the annual levels.

The Hon. RICK COLLESS: I think you mentioned that the levels you were experiencing were between 6 and 8 parts per million or something like that.

Mr BUFFIER: That was in the first study, yes.

The Hon. RICK COLLESS: And the background levels were 25 or 30?

Mr BUFFIER: No, that is the NEPM daily figure. The annual figure is 8.

The Hon. RICK COLLESS: If you were to get a figure of 25, or 50 even, for a few seconds or a couple of minutes that does not automatically constitute a dangerous level if the level drops back down to the background level?

Mr BUFFIER: No, there have been no studies that I am aware of in terms of health impacts of the spikes.

CHAIR: That concludes our time. Mr Buffier, there may be some questions on notice. If you are able to answer those questions we would like the answers within 21 days of you receiving them. Thank you very much for agreeing to give evidence today. I also thank your staff for showing us the sites this morning. We appreciate it.

(The witnesses withdrew)

DAVID MARK FRITH, Director, Industry and Environment, NSW Minerals Council, and

DAMON ALEXANDER RODDIS, Principal and General Manager, Pacific Environment Limited, affirmed and examined:

CHAIR: Would either of you like to make a brief opening statement?

Mr FRITH: Yes, I would. Thank you for the opportunity to appear before the Committee. I have brought Damon Roddis with me given the inquiry's focus on air quality issues. He has expertise in that area. The NSW Minerals Council is the peak industry association representing the State's mining industry. We have around 100 members ranging from junior exploration companies up to large mining companies as well as associated service providers. We do not represent the coal seam gas sector. As you would know, we prepared a submission to the inquiry given the specific reference to the "effects of coal dust pollution in the Hunter" in the inquiry's terms of reference. Air quality is an important issue for the industry and we appreciate the opportunity to put forward our views on the issue as well as comment more broadly on the industry's perceptions of the Environment Protection Authority's performance.

Firstly I would like to touch on air quality evidence in the Hunter. Australia has some of the strictest air quality standards in the world. For example, our standard for PM10—particulate matter 10 microns or less in size—is three times as strict as the recently reviewed United States Environmental Protection Agency standard. Here in the Newcastle region, air quality has met these strict standards for nine of the last 10 years. In terms of air quality around the rail corridor, there have been several long-term sets of monitoring data in the Hunter that indicate that coal trains are not having a significant impact on ambient air quality.

In the Upper Hunter, which is the centre of a lot of coalmining activity, a significant amount of new information has become available in recent years that has shown that there are a lot of other contributors to air pollution in the region. In particular, smoke from domestic wood heaters has been found to be the greatest contributor to PM2.5, the smallest particles with the greatest health impact. That is not to say that the mining industry does not believe it can improve its operations. We take air quality issues seriously and it is of direct interest to the industry's workers who live in the Hunter with their families and breathe the same air as other members of the community. Both the industry and the Government have taken dozens of actions in recent years to improve air quality information and the industry's performance.

Some of these include: the legally binding series of pollution reduction programs imposed by the Environment Protection Authority [EPA] to reduce dust emissions from mines; the industry's voluntary agreement to fund the establishment and operation of the Upper Hunter Air Quality Monitoring Network, which is providing so much useful data for us now; the industry-initiated community engagement project called the Upper Hunter Mining Dialogue, which the EPA and other government agencies take part in along with community members to deliver projects that reduce the cumulative impacts of mining in the region; and continually improving mine dust management through, for example, the use of real-time monitoring systems, weather forecasts, aerial seeding on exposed areas, and modifying or ceasing operations during adverse weather conditions. Also the industry and government have both held a range of public information sessions to provide the community with access to experts from across government agencies and research organisations to provide the most up-to-date information on air quality in the region and health impacts.

As to whether these actions are having any results, while three years is only a snapshot in terms of air quality trends the regional air quality monitoring data for PM10 indicates that long-term average particulate matter levels have remained stable in the region despite an increasing trend in coal production over that time. For another perspective I quote Dr John Drinan from the Singleton Shire Healthy Environment Group, who was recently quoted in the *Singleton Argus* as saying:

> Since 2008 we have gone from being information-poor to being information-rich and that is a great achievement for everyone involved in the process.
>
> I feel we have reached a situation where the mining industry and the departments involved are doing things and working towards improving the air quality.

I do not think Dr Drinan would say that we have achieved everything we need to, but I think his statements indicate that there are parts of the community who have confidence in both the industry and the Government that we are tackling these issues.

Lastly I would like to touch on some of the industry's perceptions of the EPA's performance. Close consultation with the industry is critical to understand the practical implications of regulatory proposals. While I have been given some examples of members of the EPA working constructively with the industry on pollution issues there have also been other examples where consultation could have been improved, particularly by engaging the industry early on in the process to discuss the issues and potential solutions rather than late in the process when the EPA has done a lot of the work itself. We believe better outcomes can be achieved more efficiently when the EPA outlines its intended objectives and then works constructively with the industry to achieve those.

On compliance and enforcement activity, our members have experienced an increase in the EPA's regulatory activity in recent years. On top of the pollution reduction programs I have mentioned, the feedback that we have been given is that there have been increased inspections, compliance and enforcement actions, reviews of monitoring data and audits conducted by the EPA. There are some indications that the EPA is taking a more heavy-handed approach to enforcement. Last year one company was issued five penalty infringement notices across its different mines—a much higher number than in previous years. Three were ultimately overturned when they were challenged. On the face of it this example appears to indicate more of a willingness to issue penalty infringement notices [PINs] than worsening performance.

This year a mine was prosecuted for what the judge described as a "minor" and "non-toxic" water discharge that temporarily affected a limited area within the mine site. The mine had no prior convictions and the judge found that it was unlikely to reoffend. Those circumstances do not seem to align with the EPA prosecution guidelines, which point to serious breaches or repeat offenders, and there are other enforcement options that could have been used.

Duplication between regulators is a major concern for our members. The EPA is not the only environmental regulator of mining activities, and there is actually a lot of duplication between the EPA and the Department of Planning particularly in the areas of air quality, noise and blasting. The two agencies essentially have dual responsibility for these areas so there can be overlapping conditions, overlapping compliance and enforcement and different opinions between regulators, which is extremely frustrating for the mines. There is even an example where a mine was issued two penalty infringement notices for the same blasting event—one by the EPA and one by the Department of Planning. It is an inefficient and confusing system and both agencies could save resources if the duplication was eliminated.

In terms of the EPA's air quality priorities, with all the new information now available about air quality in the region we think there is a need for a review of air quality management strategies. The Upper Hunter Particle Action Plan is centred on meeting a PM2.5 target, which is understandable given that PM2.5 are the smallest particles of highest health concern. The action plan has 10 actions directed at mining emissions and only two to all other sources. But since the plan was developed mining emissions have now been shown to make a relatively small contribution to PM2.5 exposure in the major population centres. We think the plan needs to be reviewed to ensure the sources creating the most risk are appropriately targeted.

In conclusion, we agree that the EPA has a tough job. There will always be different expectations about what the EPA should and should not be doing and what is an acceptable level of environmental impact. Confidence will be gained where the EPA bases its decisions on objective assessments of the scientific evidence and directs its efforts towards the greatest risks, engaging expertise from other departments and outside government where needed while being transparent and engaging with stakeholders throughout the process. Again, thank you for the opportunity to appear before the inquiry. I am happy to take questions.

Dr MEHREEN FARUQI: There is plenty of evidence to suggest that diesel fumes are a significant pollutant in this area but your submission appears to question these assertions. Is the industry investing in any new technologies that could move away from diesel coal trains or anything to try to reduce diesel emissions?

Mr FRITH: The work that the Minerals Council has been doing has been focusing on coal dust emissions from coal trains. We have not been specifically focusing on the diesel emissions from coal trains and so I am not really in the best position to comment on that. But I do understand that as part of the EPA's non-road

diesel emissions strategy they have been consulting with the train operators and potentially looking at trialling new technologies.

Dr MEHREEN FARUQI: You also state in your submission that you believe there is not sufficient evidence to warrant covering coal trains even though, as I mentioned, based on an earlier study the Senate inquiry recommended covering and washing coal. Also Connell Hatch was commissioned by Queensland Rail to assess options and recommended covering wagons with a metal or fibreglass lid. I just question why the Minerals Council would not look into that when there are recommendations from various organisations to do it rather than looking at a study of veneering coal loads.

Mr FRITH: The Connell Hatch study did not recommend covering wagons. It evaluated a range of options including covering wagons and veneering as well as a range of other options for managing dust emissions from coal trains. It found that covering wagons was actually impractical and it recommended other options, including veneering. That study did not recommend covering wagons.

I have also read the Senate inquiry report. Similar to Mr Buffier's comments earlier, I cannot see the evidence that has been presented in that report that supports the conclusion and the recommendation to cover coal wagons. I think, to paraphrase the report, it said that the amount of dust that comes from coal trains is a disputed point and therefore we think you should cover coal wagons. I do not think that the evidence is provided in that report to support that conclusion.

Dr MEHREEN FARUQI: You have also suggested in your submission that covering coal wagons would be a significant cost to the industry. Have you done any cost estimates on that?

Mr FRITH: We have some preliminary indications from some studies that are underway at the moment. The cost of retrofitting wagon lids would be of the order of $10,000 to $15,000 per wagon. On top of that you would have operating costs and then you would also have upgrades to infrastructure at the loading points, the unloading points and then potentially throughout the rail network as well to cater for the wagon lids. We have not done any costing on those other infrastructure upgrades.

Dr MEHREEN FARUQI: Some of the reading I have been doing points to some benefits to coal companies from covering coal wagons and thus reducing loss of coal in transit. Is that something that you have looked at?

Mr FRITH: There has been some discussion around the potential loss of coal during transport. One company has undertaken wind tunnel testing which found that for its coal types there was not any significant amount of coal being lost during transport. Certainly, if you are talking from a purely commercial point of view about coal loss I do not think the justification is there.

Dr MEHREEN FARUQI: I understand that there is a community committee that the Minerals Council has called the Upper Hunter Mining Dialogue?

Mr FRITH: Yes.

Dr MEHREEN FARUQI: Would you tell this Committee about the makeup of that committee? How many community representatives are there? Is anyone from the Environment Protection Authority represented on the committee?

Mr FRITH: Yes, it is a big bureaucracy, if you like. We have four working groups covering the areas of emissions and health, water, land management and social impacts and infrastructure. It was initiated by the industry in 2010 in response to concerns about the cumulative impacts of mining in the region. Across those four areas we have community representatives on each of those working groups. The Environment Protection Authority has recently joined both our water and our emissions and health working groups. So we have a good cross-section of government, community, industry and some other industry groups like Singleton Beef and so on.

Dr MEHREEN FARUQI: Are the minutes, discussions and outcomes of what that committee talks about open for the community to see?

Mr FRITH: You can find all the minutes and agenda papers on our Upper Hunter Mining Dialogue website.

Dr MEHREEN FARUQI: Given that coalmining is expanding in New South Wales, and if the Maules Creek mine goes ahead that means 30 million tonnes of coal will be exported every year which will increase coal train movements by the thousands. Do you think that huge increase will have a big impact on air pollution in the Hunter? Are there any plans by the Minerals Council to address that?

Mr FRITH: I cannot comment on the exact increase in train movements that would result from that particular development over time. As I mentioned in my opening statement, we have looked at the air quality monitoring data from the past few years, not only in the Upper Hunter but also in the Newcastle region and we have compared that to increasing coal production over that time. The long-term trends in PM10 data have been relatively stable compared to the increasing trend in coal production. So I think there is not necessarily a direct correlation between increasing coal production and air quality impacts.

Dr MEHREEN FARUQI: Nonetheless the community is very concerned about air pollution, particularly the air pollution from coal dust. What do you think can be done to alleviate community concerns if you think that is not a big issue?

Mr FRITH: That is why we initiated our own studies earlier this year looking at ways that we can improve the management of the coal chain to reduce potential dust emissions from coal trains. First, we had a look at all the monitoring data that was available, not only at the set of studies that has been done for the ARTC but also at the dust deposition monitoring that has been done for over a decade—I think 15 years—at Thornton. We also looked at the Beresfield monitor which was referred to earlier, which is only a few hundred metres from the rail corridor and which has long-term air quality monitoring data for both PM10 and PM2.5. We have looked at a few other studies as well. What we have concluded from that is that coal trains are not having a significant impact on air quality to begin with. But we recognise that there are some improvements that can be made throughout the coal chain in loading practices, potentially looking at things like wagon door maintenance and so on, and also unloading practices.

We have commissioned Pacific Environment and Introspect Consulting to look at what these options are. We are hoping to have those studies concluded before the end of this year. We engaged the community at the beginning of that study to get input into it, including presenting to the Newcastle Community Consultative Committee on the Environment where we got some very good feedback. We take the issue seriously. We have reviewed the evidence ourselves and we are taking steps to improve our performance in that area.

The Hon. LUKE FOLEY: I am interested in alternative actions that could be taken other than covering the wagons to improve air quality. What can you tell us about improved loading practices? The submission of the Environment Protection Authority tells us that in Queensland a majority of mines have adopted improved loading practices. What can you tell the Committee about that?

Mr FRITH: That can mean making sure that wagons are not overfilled, there is no spillage over the sides of wagons or onto the ends of wagons. It can also include things like monitoring of wagon doors upon exit from the loading point to make sure that there are not any significant leakages of coal. A range of things can be done and also the potential application of water or veneer if it is demonstrated that that is needed.

The Hon. LUKE FOLEY: Does the industry see veneering as the alternative to covering the wagons? In other words, you would probably want nothing to be done to you, but if the regulator is determined to deal with the question of your wagons do you see veneering as a better alternative?

Mr FRITH: I would not say that we do not want anything done.

The Hon. LUKE FOLEY: A less worse alternative.

Mr FRITH: We have commissioned the studies that I mentioned just then voluntarily, so we are undertaking a series of wind tunnel testing ourselves to work out whether either veneering or water, or any treatment at all, is required because it depends on the coal type and travel conditions that are experienced in New South Wales. But certainly veneering is a potential mechanism of minimising dust emissions from the surface of coal loads.

The Hon. LUKE FOLEY: Given the public debate on air particle pollution in the Hunter Valley Rail Corridor, it strikes me that the absence of any monitoring of how much coal is lost from trains now is something that will not remain unaddressed. What do you think ought to be done to better inform us of how much coal is lost from trains and how we ought to reduce that loss?

Mr FRITH: I think Mr Roddis might be able to comment on this because he has been undertaking some of the studies for us as well. It is probably very difficult to get an absolute figure on the amount of coal lost from a particular train. What we do know is that no matter how much is being lost it is not having a significant impact on ambient air quality around the rail corridor. So we do have that evidence. What we can do is look at where coal can potentially be lost from coal trains and take what measures we can to make sure that that is minimised. That can include things like avoiding overfilling of wagons and spills, looking at leakage from wagon doors, emissions from the tops of wagons, and so on.

Mr RODDIS: I would just like to add that the current study we have been commissioned to complete on behalf of the Minerals Council has also looked at a survey essentially of the whole coal chain—so from loading facilities through to those responsible for the trains that the coal supports and then subsequent unloading facilities. That survey has been extremely extensive in gauging what current practice is, gauging industry perception as to where issues, if they exist, do lie, and looking at what industry thinks it can do to improve it.

I do not want to preclude the outcomes of that report—I think Mr Frith said in his submission that we are looking to publish that report before the end of the year—but there will be a series of recommendations in that report that refer to what improvements industry can make, many of which are of a procedural nature. That, in turn, means that they are things that can be implemented immediately. So those are some short-term fixes that potentially will have a tangible benefit in regard to coal loss.

The Hon. LUKE FOLEY: Pardon my ignorance but it strikes me that you would very much want to reduce the coal loss from trains because you would rather sell the coal than spill it. Is that not right?

Mr FRITH: Obviously if a significant amount of coal was being lost between the loading point and the port it would be identified as a result of the difference in volumes being loaded versus the difference in volumes being unloaded. As far as I am aware, that difference is not being noticed.

CHAIR: On a point of clarification: Do you measure volumes or weights?

Mr FRITH: I think there are different loading methods. Some are based on volumetric methods and some are based on batch weighing systems.

CHAIR: How is the sold coal then measured? At the unloading terminal I take it your members are paid by what is delivered by ARTC? Is that correct?

Mr FRITH: I would have to take that question on notice.

CHAIR: Could you advise the Committee as to how the loading and unloading are measured? Is it volumetric? Is it just a guess or do they weigh the bogies?

Mr FRITH: They would be weighed or measured, yes.

CHAIR: Will you confirm that?

Mr FRITH: I can confirm that on notice.

The Hon. LUKE FOLEY: I think the current audit being conducted by the Environment Protection Authority would probably assist the Committee, which is why I started with that question to EPA officials, given that they are currently auditing loading and unloading practices. I would be interested in receiving the results of those audits before our Committee.

CHAIR: Do your members own the rolling stock? Is it owned by ARTC?

Mr FRITH: No, the rolling stock is owned by Pacific National and Aurizon.

CHAIR: It not owned by the coal companies themselves?

Mr FRITH: No.

Mr RODDIS: It is worth stating that the current study has involved all those stakeholders, if you like, as well—Pacific National, Aurizon and the ARTC have all been involved in the production of the current study.

CHAIR: We might put a question on notice to the EPA about the extent and methodology of the audit.

The Hon. Dr PETER PHELPS: Is it correct that coal has been mined in the Hunter region since 1797?

Mr FRITH: I believe so.

The Hon. Dr PETER PHELPS: And coal was the first commodity that Australia actually exported?

Mr FRITH: I understand it was, to India.

The Hon. Dr PETER PHELPS: In fact, the Newcastle Coat of Arms has a coal wagon on it?

Mr FRITH: I would have to take that question on notice.

The Hon. Dr PETER PHELPS: I will give you a hint. If you look at the stairwell on the way down—

The Hon. LUKE FOLEY: What is the motto?

The Hon. Dr PETER PHELPS: You have got me there.

The Hon. LUKE FOLEY: Enterprise.

The Hon. Dr PETER PHELPS: Solidarity forever, I would have thought. Coal is very important for Newcastle and the Hunter region generally. Can you quantify that? Approximately how much money does coalmining bring into the Hunter region?

Mr FRITH: We produce an economic report on an annual basis. Last year's report identified, I think it was, a total of $12.8 billion in direct spending by mining companies on supplies and wages across New South Wales.

The Hon. GREG DONNELLY: That is across New South Wales?

Mr FRITH: Yes, across New South Wales. In the Hunter region it gets around half of that, so from memory around $6.3 billion in direct spending. That is not modelled impacts; that is direct spending by the mining companies in the region.

The Hon. Dr PETER PHELPS: What sort of employment prospects does that relate to in direct and indirect employment arising from the coalmine?

Mr SCOT MacDONALD: The Australia Institute says nil.

Mr FRITH: Direct employment in the coal industry, according to Coal Mining Services, I understand is around the 20,000 mark.

The Hon. Dr PETER PHELPS: That is 20,000 in direct employment?

Mr FRITH: Direct employment.

CHAIR: I take it this is contextual to the terms of reference, is it?

The Hon. Dr PETER PHELPS: Yes.

The Hon. GREG DONNELLY: Generally relevant.

The Hon. Dr PETER PHELPS: I think it is directly pertinent to the inquiry at hand. You seem to have a tense relationship with the Environment Protection Authority [EPA]. Given that green groups consider that the EPA is a lapdog of industry, would that be your assessment of the EPA?

Mr FRITH: No. Our assessment of the EPA is that they are a strong regulator. They are certainly taking an increasing amount of action that is directly affecting our members, particularly over the last few years. As I mentioned, there have been the pollution reduction programs that have been applied to all coalmines across the State, looking at how they can reduce their dust emissions. There have also been specific pollution reduction programs that have been applied to individual coalmines looking at other issues, such as water pollution. I commend them for this: They have been undertaking more work to gather better data around air quality in the region and some of those studies were mentioned earlier, including the Lower Hunter particle characterisation study and the dust deposition study around the rail corridor. The impression that our members have is that the EPA has stepped up its compliance and enforcement activities over the last few years in particular. Certainly we think that some of the approach they have taken to that in terms of consultation could have been done better, and they could have engaged the industry earlier on in the process.

The Hon. Dr PETER PHELPS: Does the Minerals Council consider that emissions of coaldust are a genuine problem, or simply a stalking horse against the coal industry more generally by groups, such as the Climate Action Newcastle, the Australian Coal Alliance, the Australian Youth Climate Coalition, the Newcastle Environment Lobby, the Nature Conservation Council, Rising Tide Newcastle, and the Wilderness Society?

Mr FRITH: I think there are some groups that have exaggerated some of the impacts from coal trains.

The Hon. Dr PETER PHELPS: And why would they do that?

Mr FRITH: Some of those groups are trying to prevent the Newcastle coal terminal from being expanded and prevent future coalmines being expanded as well.

The Hon. Dr PETER PHELPS: Would it be true to say that those groups want to shut down coalmining in Australia completely and utterly?

Mr FRITH: Some of them may want to.

The Hon. GREG DONNELLY: Point of order. That is not relevant.

CHAIR: I was just about to say that I think we are getting off relevance. Can we keep our questions close to the terms of reference, Dr Phelps?

The Hon. Dr PETER PHELPS: Yes. Given that the EPA has expressed its view that there are not significant concerns of coaldust per se, do you believe that it should fall upon the industry to fix a problem, which does not appear to exist in the first place?

Mr FRITH: There are improvements that can be made to reduce potential emissions from coal trains. The industry's view is that while the impact of coaldust emissions from coal trains is small, we think that we, in the philosophy of continuous improvement, should look at what those options are throughout the coal chain and see what practical improvements we can make. We are not out there to spend hundreds of millions of dollars to just simply satisfy a perception about the impacts of coal trains. What we want to do is make sure that any measures that are implemented are practical, and that means they are economically feasible, they will have an impact, and they are able to be integrated within existing infrastructure.

The Hon. RICK COLLESS: I was going to ask similar questions to questions that have been ruled out of order or were challenged.

CHAIR: I did rule it out of order, yes.

The Hon. RICK COLLESS: I will ask you another question in relation to some of the other air quality issues, particularly in the Upper Hunter region rather than the Newcastle region in relation to sulphur oxides and nitrous oxides. As I understand it, it is these sulphur oxides that give you that acrid repression of breathing in

areas where it is high. What is the industry doing to try to overcome some of those issues about the other air quality issues in the Upper Hunter?

Mr FRITH: As a understand it, those issues primarily are related to power generation as opposed to mining. The power generators are not members of ours so it is not an issue that our members are addressing specifically. But I do understand that the Upper Hunter Air Quality Monitoring Network monitors some of those things. They would be in a better position and the Office of Environment and Heritage [OEH] to comment on those particular pollution issues.

CHAIR: Just before I move to questions by Dr Faruqi, we have been talking about air quality issues and the transportation of coal. Who actually owns the cross-country conveyors that deliver coal to the power station? Is it the suppliers or somewhere else, generally speaking?

Mr FRITH: I would have to take that on notice.

CHAIR: Yes, if you could. In other words, who is responsible for the maintenance of those and any air quality issues that arise from those long-distance conveyors?

Dr MEHREEN FARUQI: I just have a couple of more questions. In your submission the New South Wales Minerals Council states that there is an increasing trend of regulatory intervention of the EPA—I think you mentioned that as well in your opening statement—and that it is having a financial impact on the industry. You also have said that the Environment Protection Authority could better use its resources in other initiatives.

Mr FRITH: Yes.

Dr MEHREEN FARUQI: Given that the role of the EPA is to ensure environmental protection and to minimise risks to the community's health, do you think these are unfair remarks? Could you elaborate a little bit more on why you have suggested that?

Mr FRITH: The industry is happy to take on its share of responsibility for improving air quality around the areas where it operates. What we are saying is that it is clear from the health evidence that PM2.5 drives the vast majority of health impacts as opposed to the coarser fractions of particulates. What the evidence has shown over the last few years, the new evidence that has come to light, is that coalmining is not a significant contributor to PM2.5. So if the role of the EPA, and the Government more broadly, is to look at overall health outcomes, specifically targeting the mining industry while not ignoring but not giving as much attention to other more significant sources, it will not result in those overall health outcomes that everyone wants to see. In the light of the new information in recent years, what we would like to see is a review of those strategies to make sure that the EPA is directing resources across all sources of particulates and it maybe should make an assessment of the relative costs of reducing particulates from those different sources.

Dr MEHREEN FARUQI: Given that there is some issue on data and where the pollution is coming from PM2.5 to PM10, do you not think the EPA should be using the precautionary principle in ensuring that community health and environmental health become the priority?

Mr FRITH: I think there is a lot of good data. I do not think there is necessarily big gaps in data anymore. Certainly the EPA is taking some good steps to fill what gaps might remain. As I said the Upper Hunter particle characterisation study is very, very clear. There has been ANSTO particle characterisation here in Mayfield for over a decade, which similarly has shown that the coaldust is not showing up in those particle characterisation studies either. I think there is a lot of data to demonstrate that there are a lot of contributors to air quality and that air quality strategies need to target all those different sources.

Dr MEHREEN FARUQI: You mentioned earlier that you would have preferred that the EPA consulted with you in some of the processes.

Mr FRITH: Yes.

Dr MEHREEN FARUQI: Have you communicated that the EPA?

Mr FRITH: Yes.

Dr MEHREEN FARUQI: Have the processes changed?

Mr FRITH: Yes, we have communicated to the EPA and we were able to secure a workshop with the EPA and industry members in the upper Hunter to discuss some of the proposals that they have so that they could take on board some more feedback from the industry directly about some of the practical implications of what they are proposing and they can refine some of those proposals.

The Hon. GREG DONNELLY: Thank you, gentlemen, for coming along this afternoon. In your submission, specifically on page two and going over to page three under the hearing, "Increasing the EPA's regulatory intervention", you state in the first paragraph: "The New South Wales mining industry … and queries whether the EPA's initiatives are fair and the best use of the EPA's resources." I am just wondering on what basis you are able to judge whether or not the EPA's resources are being well used in its interface with the mining industry and other industries?

Mr FRITH: Well, that is the question that we are asking. We would like to see the split.

The Hon. GREG DONNELLY: I am sorry?

Mr FRITH: That is the question we are asking. We would like to see how the EPA's resources are divided up in areas like air quality. For example, in terms of wood smoke, we are aware that the EPA has $1 million committed across the State. I think there is $60,000 that is available to each local council to work on wood smoke initiatives. Given that wood smoke has been shown to be one of the most significant sources of PM2.5 exposure in the region, our question is: Is that a sufficient amount of resources to be directed to that issue when millions of dollars are being spent on other types of initiatives?

The Hon. GREG DONNELLY: Or for that matter, wood smoke may be something that is more relevantly a question of government policy as opposed to the authority's position on it, surely?

Mr FRITH: I assume that the authority has some discretion how it allocates funding. I would like to see how those decisions are made.

The Hon. GREG DONNELLY: In the same part of the sentence you talk about the EPA and the question of fairness. Is it your submission that the EPA is not acting in a fair and balanced way towards the mining industry?

Mr FRITH: The perception from some of our members is that the industry is sometimes unfairly targeted. As I mentioned, the Upper Hunter Particle Action Plan, which has a goal of meeting a PM2.5 target has 10 actions directed at the mining industry and two actions directed at all other sources. That would appear as a significant bias towards initiatives that affect the mining industry, despite the PM2.5 evidence showing there are other more significant sources of PM2.5.

The Hon. GREG DONNELLY: You are saying it is a perception that some miners have. My final question refers to page 10 and the non-road diesel exhaust emissions. I am not sure whether you were here at the commencement of proceedings this afternoon when the EPA representatives commented on their increase to a thoughtfulness about this issue of the non-road diesel exhaust emissions and their inclination to be looking at this, but you seem to be somewhat sceptical about this issue, if I have read what you state here correctly. You do not think this is an issue that needs to be looked at carefully—the non-road diesel exhaust emissions on mining sites?

Mr FRITH: No. That is not what we think. We think that non-road diesel exhaust emissions are one of many sources of particulates that need to be addressed. The EPA has made some public statements that there is readily available technology to reduce emissions from non-road diesel exhaust emissions. The work that we have done has identified that for high- horsepower engines that are used at mine sites, the level of technology is certainly is not up to the same standard as it is for smaller-size diesel engines. Non-road diesel exhaust emissions and their controls at mine sites, particularly because they use those high-horsepower engines, is a complex issue. We are not saying that we do not want to see any action there. What we are saying is that we want to work with the EPA to work out what is practical.

CHAIR: Some of your members do in fact invest in fuel modification technology for underground mining.

Mr FRITH: Yes.

CHAIR: I also understand that some of your members have investigated the use of fuel modification technologies for draglines and for big shovels, et cetera. Are you aware of that?

Mr FRITH: At a high level, I am aware of it. The underground situation is obviously a very different situation. There is a very small amount of diesel used in underground operations.

CHAIR: Okay.

Mr FRITH: Given the confined environment, there are particular occupational health and safety implications from that use. It is a completely different scenario to an open-cut type scenario. As to the different fuel used in draglines, I am not aware of that.

CHAIR: When I said "draglines", I meant draglines or large-haul or large equipment. The engine sizes are roughly the same—big.

Mr FRITH: All diesel used in New South Wales open-cuts is the ultra-low-sulphur diesel, the same as on-road.

Mr SCOT MacDONALD: Do your members directly receive complaints about pollution, whether they be what we are discussing here today, on the side or anything like, and if you do, how many, and how do your members respond? You may want to take the question on notice.

Mr FRITH: I will have to take that on notice.

CHAIR: You will take that on notice; it is a fairly lengthy question.

The Hon. Dr PETER PHELPS: You complained about the issuance of penalty infringement notices [PINS] in the first instance. In your view why is that necessarily a bad thing, especially as PINS are for remedial action?

Mr FRITH: I am not saying the penalty infringement notices are a bad thing per se. What I was saying is that there was a significant increase in the number of PINS issued to this particular company across its mine sites and subsequent to them being issued three of them were overturned, which indicated more of a willingness on the EPA's behalf to issue PINS as opposed to an indication of worsening performance on the mine's behalf.

The Hon. LUKE FOLEY: Before today I had heard that the capital cost to cover the wagon was around $7,000; you say $10,000 to $15,000. I was wondering if you could get back to us in writing with some more detailed information about what the industry contends the cost impost would be if the regulator was to impose a requirement as suggested by the Senate committee.

The Hon. Dr PETER PHELPS: Can I add to that?

The Hon. LUKE FOLEY: Sure.

The Hon. Dr PETER PHELPS: Also the wagon costs of veneering?

The Hon. LUKE FOLEY: Sure, and I am wondering what information the industry has about how many trips the average coal wagon would undertake from the coal loading facility to the port; so any and all information you could give us, recognising that we are ultimately not being asked to make recommendations about whether the wagons ought to be covered; this is an inquiry into the EPA. But simply to inform Committee members, given the currency of this debate, that would be much appreciated.

CHAIR: The time for the witnesses has concluded. Any questions taken on notice are to be returned within 21 days. The secretariat will send you the questions formally. Once you receive them we would appreciate the answers within 21 days. Thank you very much for agreeing to see us.

(The witnesses withdrew)

(Short adjournment)

HOWARD NICHOLAS HIGGINBOTHAM, Lecturer, Public Health, University of Newcastle, and Coal Terminal Action Group,

JOHN ANDREW MACKENZIE, Community Liaison, Hunter Community Environment Centre, and Coal Terminal Action Group, and

JAMES MARTIN WHELAN, Representative, Coal Terminal Action Group, affirmed and examined:

CHAIR: Before we proceed to questions I understand that Dr Whelan will introduce the panel and then a couple of you will make opening statements.

Dr WHELAN: Thank you, Chair, and thank you to the Committee for the opportunity to speak to you today. We have prepared a short statement that in total will run hopefully not much longer than five minutes, speaking in turn.

CHAIR: That is fine; it is your time.

Dr WHELAN: Terrific. I wanted to introduce the Coal Terminal Action Group. The Coal Terminal Action Group is an alliance of 20 community groups—non-government groups—which began meeting in April 2012. We have met every fortnight, give or take 2½ years since then. We are united in our concern that the fourth coal terminal that is proposed for Newcastle would have deleterious, adverse community health impacts, amongst other impacts. We are residents in the world's largest coal port. This is the place where it is logical that coal dust and pollution issues are likely to be experienced most acutely and where regulatory intervention is most directly and immediately required anywhere in the world.

There is a proposal for a fourth coal terminal that would increase coal exports in Newcastle from 210 million tonnes to 280 million tonnes per annum in what is already the world's largest coal port and, I should say, in an area where not only is there a community perception of air pollution but we have received 107 air pollution events this year, including 40 leading up to today's hearing—contrary to other statements that have been made today. We had a lack of trust and confidence in the EPA. We found it hard to accept that coal wagons did not pollute. It was contrary to evidence; it was contrary to our community concern; it was contrary to monitoring that had taken place and to studies that we have read from other places in the world, for instance, the United States where it is acknowledged by industry that between 1 per cent and 3 per cent of coal is lost in transit, just to answer one of the questions that was asked here previously.

That was compounded when just before the report of the second Australian Rail Track Corporation [ARTC] study PRP 4.2 was about to be released, I received while I was working in the job that Dr Mackenzie is now in at the Hunter Community Environment Centre an email from an anonymous source giving us a copy of the report and cautioning us that this was different to the report we were going to see released in just a week's time. That turned out to be the truth. In fact, between 24 May last year and 30 May the second ARTC report was dramatically changed where 18 of the conclusions were changed, in three instances the conclusions were reversed to delete the word and insert the word "no" or "not" and in many other instances conclusions were modified to significantly reduce the pollution levels that were associated with coal trains.

At that time the unknown source who had leaked that report to us, who we believe to be directly involved in the commissioning of the report advised us to lodge a Government Information (Public Access) Act [GIPA] request. We received 3,000 pages of internal correspondence within the EPA and between the EPA and the ARTC about this report. I had the pleasure of spending most of my Christmas holidays last year wading through those 3,000 pages of correspondence and what I discovered was a pattern of the EPA anticipating, in some instances incorrectly, the results of the ARTC's study, preparing not only a media plan in relation to previous discussion but a media statement to which they stuck, even though the report that they subsequently received contradicted that media strategy.

We did not trust or have confidence in the EPA, and we have less after the 3,000 pages of correspondence. The scope of the study that the ARTC did was significantly reduced and we would be happy to expand on how it was reduced and why. The technical advisor's reports and advice were overlooked, as Mr Foley has highlighted. Peer review, which was highlighted by Dr Faruqi, was initiated only after a controversy and was not instigated at the EPA's behest, and the coal wagons pollute conclusion was overlooked in the whole thing. That is our key concern. We are a community alliance; we are not an environmental alliance; we are not

an anti-coal alliance. Coal wagons pollute is a simple reality. We do not need to compare coal trains and other types of trains. We need a regulator that is willing and prepared to address that source of pollution.

Dr MACKENZIE: Building on from what James said, I will address the way we feel this particular issue relates to the broader concerns of the inquiry, specifically in the way that environmental regulation, reporting and management should be undertaken. It has long been established in this field that a pressure state response approach is the most appropriate means of addressing environmental concerns and issues. That is, you begin by identifying the environmental and public health pressures that are derived from different activities, you specify both the state of the environment that is occurring as a consequence of these pressures, that is both condition and trend, and you also compare that against a desired or ideal aspirational state. On that basis you derive policy, management or other kind of response—hence the pressure state response—to repair, restore or maintain the environment in a way that matches that desired state. In all cases in this approach an evidence-based model is paramount as any attempt to evaluate the adequacy of the regulatory response, that is to say, does it match the scale and extent of the pressure of the activity on the environment, needs to be done on the basis of evidence.

This is a consistent point that has been made by many of the speakers today. We need to be assessing what is the state of the environment, what is the pressure on the environment from specifically the issue of coal trains, and does the response that we are currently getting match the extent and scale of the issue that is being addressed. In the case of the contribution of coal trains to particulate pollution, the consequence of the air-monitoring studies that we have been speaking about is that there is now no consensus view of the extent of the problem; there is no shared understanding of the contribution that coal trains make to the Hunter's overall particulate pollution load. Without this, there is no basis to evaluate the appropriateness of the EPA's management activities, no basis to establish performance standards and no baseline to measure achievement of pollution mitigation from coal trains over time.

What we have previously raised with the EPA and industry is that there is a need for an open and transparent roundtable process that would assess the relative costs and benefits of all of the available suite of options for reducing the pollution load from coal trains and to mitigate particulate pollutions in general. Each option should be evaluated in terms of its effectiveness, efficiency, reliability and maintainability, and so forth. This can only be done in the presence of reliable monitoring information. The great failing of this process is that that was precisely the information that the ARTC study was intended to provide. Given the current state of air quality in the upper and lower Hunter, we need to be addressing all potential sources, assessing their relative significance to the pollution load and determining where the options are to bring that within public health standards. Today we have heard as well that there is a linear relationship between reduction in particulate pollution and corresponding health impacts. I would like to pass over to Professor Higginbotham to expand on this point.

Associate Professor HIGGINBOTHAM: I want mostly to focus on the public health side of things. I want to start by commending the EPA for championing the tightening of air-quality standards throughout Australia. I think that is a very positive thing and I commend them because we know that air pollution kills more Australians each year than traffic accidents. Inhaled particulate matter is associated with disease and death. The coarse particles of between 2.5 and 10 microns reduce lung function, exacerbate lung disease and can cause lung cancer. Fine particulates, which have been spoken about repeatedly here, are those that can enter the bloodstream and cause heart disease, stroke and premature death. With no safe level of PM, good policy is to regulate for increasing levels of clean air. What about Newcastle's air quality? We have heard a fair bit about that, but I think in parts of the Hunter it is not that great. Over the past two years PM10 levels in Newcastle and Beresfield have exceeded what the World Health Organisation [WHO] would set as a standard of 20.

During these two years Beresfield has gone over the PM2.5 advisory level. Remember, Beresfield is just about 300 metres from the coal corridor. When you rank order all the State's air-quality monitors, according to PM10 annual averages, which is an interesting exercise, you find that all the Hunter sites are above the mid-point and occupy 10 of the top 13 places that exceed the WHO's standard, and that is slide number 12 in our handout. When we did our citizen science dust study in the neighbourhoods around the port and other areas we found quite high levels of PM10 in houses that were near the rail corridor and the port. In terms of rail corridor pollution analysis—this will be my last brief comment—the coal rail corridor has about 42,000 coal train trips per year. Should the port reach 280 million tonnes with T4, residents will experience over 77,000 local coal train movements each year—one every 6.7 minutes. There are six freight trains a day as opposed to 114 coal trains a day. That is an important statistic when we talk a bit more about the ARTC study.

We need comprehensive, credible scientific evidence of the pollution impacts of current rail movements, and we need modelling of what will happen if those numbers of coal trains and so forth increase. And we need workable mitigation measures to be implemented. The ARTC study focussed on the wrong question and used the wrong method. Because it had significant design flaws, its conclusions are not justified, I believe, and it fails to provide the information that we need. Tens of thousands of house residents and schoolchildren are within half a kilometre of this corridor. It is an important public health issue that has not been addressed, in my view.

Dr MEHREEN FARUQI: Thank you very much for your submission and also attending here to present evidence. On page 2 of your submission you state that "uncovered coal wagons are significant sources of particulate pollution". This morning we heard a different view on this from the EPA and the NSW Minerals Council. Could you expand a little on your assertion and the evidence on which you base that?

Associate Professor HIGGINBOTHAM: There is world literature that addresses the issue of how much coal is lost from a train as it passes on its way to wherever it is going. That literature states from anywhere between 0.001 per cent and 1 per cent or up to 3 per cent can be lost. There is that existing world literature. When they did some modelling from Portugal, the way that they assessed whether or not it was lost was by putting a big stocking on the back of a wagon and collecting the dust. To me, if the EPA was really interested in what is falling off the back of a wagon, the way to do that is to put some kind of a monitoring device on the back of a wagon and then just have a look at that. Maybe there is not a lot of technology out there to do that, but one of the professors of engineering here at Newcastle university, named John Lucas, has a device that could do that. Connell Hatch, based on that Portuguese research where they put a big sock on the back, estimated that roughly 9.6 grams per kilometre per wagon is what is lost. They used that as a model for looking at coal train movements in the Queensland system and they estimated that about 5,370 tonnes were lost in 2006-07. That is about a 0.0035 per cent. That is the world literature. The other thing, of course, besides coal is the diesel emissions from these usually three locomotives. If you could imagine 44,000 times three diesel locomotives, that is the kind of diesel emission issue that is associated as well with the passage of those trains.

Dr MEHREEN FARUQI: You said that if the EPA was interested it would use other methods to monitor?

Associate Professor HIGGINBOTHAM: Yes.

Dr MEHREEN FARUQI: Why do you think the EPA is not interested? What could it do better? Does it need resources?

Associate Professor HIGGINBOTHAM: I do not want to speculate on motives, but I think that they asked the wrong question of the method that they employed. Actually, maybe I should thank them or curse them for starting me on an odyssey of trying to figure out how could they come up with outcomes that show that a two-second pass by of a passenger train and a three or four minute pass by of a loaded coal train or freight train, you cannot tell them apart. Their early studies were of that nature. I actually spent a considerable amount of time—I have consulted colleagues, including physicists and air scientists and researchers in my unit to say how could you design a study that would allow you to come up with that null result? Basically it is a null result. They have said that there are increases that are statistically significant, but they cannot find a difference between the train types. Well, it has to do with how precise your measurement is, whether you can distinguish differences, especially when those differences may not be very large.

Dr MEHREEN FARUQI: In 2011 the New South Wales Government commissioned Katestone to prepare a report on international best practice to prevent coal dust emissions. So far as I understand, that report recommended covering coal wagons and coal stockpiles and that these measures would reduce emissions by 99 per cent. I asked the Environment Protection Authority [EPA] a similar question, but they were not aware of the report. Based on your dialogue with the EPA, why do you believe that the Australian Rail Track Corporation [ARTC] and companies who transport coal in the Hunter have not been instructed to cover coal wagons?

Dr MACKENZIE: I can answer the first part of that question. That is exactly right. The Katestone report was entitled "International Best Practice Measures to Prevent and/or Minimise Emissions from Particulate Matter from Coal Mining". It was primarily focused on coalmining, but it did include some reference to the transport of coal. It had a range of contributions, best practice recommendations, including use of profilers and we have heard the need to maintain a consistent profile in a loaded wagon, maintaining a 100mm free board edge around the edge of the wagon, using suppressants and, of course, covering loads with either a tarpaulin or a

hard cover. Also, wagon wheel wash was one of the other options, primarily to do with the resuspension of particulates that are deposited on the ground as a result of train movement over time.

All of these recommendations are very important recommendations about how to limit the amount of particulate pollution from trains. What we need and still lack is an understanding of the relative contribution that each of these options makes to reducing particulate matter. Again, the ARTC report was precisely intended to provide that. Is it coming out of the tops of wagons? Is it coming out of the bottom? Is it being resuspended? These are the questions that because of the disputation over this environmental monitoring data, we do not have any understanding of which of these potential management options deliver us the best bang for buck. That is why we need this study to be reviewed, to determine exactly what is the contribution of coal trains to particulate pollution and, of all of these suite of options, what is the most effective for improving the health of Upper and Lower Hunter residents.

Dr WHELAN: We asked the EPA directly why they would not propose to or instruct the ARTC to cover coal wagons. The answer that we received from senior EPA staff was that the Commonwealth-owned ARTC—a corporation that is wholly owned by the Commonwealth of Australia—would take them to court. If the EPA of New South Wales instructed this Commonwealth-owned corporation to take a reasonable measure—a well-documented and justified measure—to reduce particle pollution, it would then take the EPA of New South Wales to court and succeed in rejecting that condition.

Dr MEHREEN FARUQI: In your submission on page 17 you also note that the EPA's handling of this incident constitutes a breach of public trust. What can the EPA do to restore that trust within the community?

Dr MACKENZIE: One of the key available options that we think that this case study leads directly to is the need for transparency, the need for independent technical review of studies, the need for public consultation on these studies so that we can understand exactly where the conclusions are coming from on the basis of these technical reviews and that there is open scrutiny on the way in which that technical information is being used as a foundation for policy.

The Hon. LUKE FOLEY: Gentlemen, thanks for appearing. I am a bit confused. Are you calling for further reviews and study of the contribution uncovered coal wagons make to particle pollution in the rail corridor, or is it the case that you have essentially passed judgement that uncovered wagons make a significant and meaningful contribution to air particle pollution and you simply want them covered? Which one is it?

Associate Professor HIGGINBOTHAM: As far as I am concerned, and they can have a different opinion, the study that was done that has been used extensively by the EPA and by the Minerals Council and others that says there is no difference in coal train types had a significant flaw embedded within it that allowed us really not to understand whether or not that was true. The main flaw is that they only put the monitor on one side of the train track. There are four tracks. The furthest track away was 10.3 metres, the closest track was 3.7 metres. The closest tracks to the air monitor were freight trains and passenger trains. The furthest tracks were the coal trains, the loaded coal train being the furthest away. This is called systemic measurement error, and I brought this out publicly when Professor Ryan spoke and presented her data. She did a wonderful job analysing the data that she had, and I said, "Do you not consider this a systemic measurement error?" And she agreed with me.

Unless you can justify or unless you can prove that distance does not matter in respect of measuring the concentration of particulate, that the coal train being an extra 10 metres away from the monitor does not make any difference, then you cannot say repeatedly, as we have heard today, that there is no difference. It cannot be justified scientifically. The other issue that is really important here and what we need to understand is what actually was the concentration received by the monitor that reflects the time when the wind is actually blowing towards the monitor, because if you have a monitor on one side when the wind is blowing behind the monitor, it is blowing the particulate some other way. When I looked at their data from the earlier studies, about 60 per cent of the time the wind was not blowing toward the monitor. Professor Ryan, because she is a statistician, loves all of the data, so she did her modelling on all of the data, even though on quite a number of the days it did not have air direction, so she could not use that to give us a better sense of the intensity of the concentrations when the air quality monitor was actually receiving the best data. Those two things are important.

The third thing—and then I will then pass it over—and why you cannot say that the three train tracks are different is because if you actually look at slide 9, it shows a picture of a train pass by. This shows the

profile of pollution coming off a single pass by of a train. It tells you that there is a plume generated that includes all three or four types of particulate, the PM1, 2.5 and 10. The PM1s and PM2.5s are the combustion of diesel as the diesel engine roars by. The PM10s and the TSPs are the top of the peak. That is a plume, or it is the total exposure that the community would be exposed to from a pass by of an individual train.

You can take an average of that from a two-minute slice in the middle and you can compare that train with an express passenger train [XPT] or with a passenger train and you get the same average. It looks like they are the same. But when you take that total plume, that total exposure profile and you calculate what is in the centre of that, it allows you to see that individual trains can be different. We had a statistician who used Professor Ryan's data, and we recalculated the average additional increase per second, and you multiply that by the length of time the train goes by—on average loaded coal trains take longer to go by than freight trains or unloaded coal trains. We found that compared to freight trains, a loaded coal train has 28 per cent more impact, 28 per cent more of that cloud that goes by and 7 per cent for an unloaded coal train. That is another way of looking at the data and it comes up with an opposite view of what we heard today and what was reported in these reports which, to me, is damaging. It really requires us to do better research to take into consideration these measurement issues, as wells the location of the monitoring.

The Hon. LUKE FOLEY: Thanks, Professor. I take it that you want more research with perhaps a different methodology?

Associate Professor HIGGINBOTHAM: I want to know—

The Hon. LUKE FOLEY: Dr Whelan and Dr Mackenzie, is it not that the case that you think the research is in, you want of the wagons covered. Is that not a fair take of your position?

Dr WHELAN: I think there is a false dichotomy that has been set up. On the one hand we are critical of the study and its methodology and its interpretation. But we cannot, at the same time, advocate for covered coal wagons and suggest that there is insufficient evidence. I want to read a sentence from the ATASU review. This is when the EPA organised—

CHAIR: What is ATASU, please?

Dr WHELAN: It is the Air Technical Advisory Services Unit. They are the experts.

The Hon. LUKE FOLEY: Of the EPA.

Dr WHELAN: That is right, who the EPA turn to for technical advice when they receive the report. In the review John Klepetko—who, Mr Foley, you referred to previously—said, "ATASU notes that statistical analysis of the monitoring data has demonstrated a statistically significant elevation in PM10 concentrations associated with trains passing the monitoring station. This finding supports the statement that trains operating on a Hunter Valley rail network are associated with the elevated particulate matter concentrations." The same reviewer, and other reviewers, pointed to the source of problems in the statistical interpretation and the study design. Like the ATAS unit, we believe that the study was highly flawed, yet it provided sufficient evidence to suggest that there was a state that required a response. It is the air pollution problem that requires the policy response. The EPA's instant response, even before receiving the report, but certainly after receiving it, was to say, "No response is required." That is not in line with the report, it is not in line with the technical advice they received.

Mr SCOT MacDONALD: Your PowerPoint presentation shows the average PM10 and average PM 2.5. There are spikes in 2002 and 2009 and then it starts to go up again in 2013, and they are both similar. Are they not our drought years? I particularly remember 2002 was a terrible drought year. We are talking about drought, bushfires, dust—all those sorts of things. Then 2009 was the end of the millennium drought, if you want to call it that, or that decade-long drought. Then in 2010 and 2011 we were flooding. Then in 2012 and 2013 it was starting to dry off and again we had big bushfires. I would like you to talk about causation. If you are a man off the street looking at that, you would say, "Cover the coal wagons. It is terrible. The coal industry is evil", et cetera, but if you drew down, surely we cannot make those simplistic statements.

Associate Professor HIGGINBOTHAM: I think that the important thing to see is there is obviously a process that has gone on historically in Newcastle in its industrial environment and so forth, and that the air has been cleaned over recent years and the EPA folks are very articulate in describing those sorts of things. If we

look at the last two years, I do not see that this is simply related to the general weather pattern, I think that the industrial emissions in Newcastle are cranking up. I think that there is an association with the amount of coal being brought into the port of Newcastle. While these figures tend to relate more to—

Mr SCOT MacDONALD: Sorry to interrupt, but how do you join the dots? You have made statements about increasing tonnage but when you look at the figures there does not seem to be a correlation?

Associate Professor HIGGINBOTHAM: I think you can say that. Just in terms of more recent years, there has been an absolute dramatic increase in the tonnage going through. Unless you do a speciation study you can't tell, and that is the other issue: What are you going to speciate? The community was very solicitous that PM10s should be looked at to see their composition, and that is taking place. I think that speciation will help us know the sources of those increases.

Mr SCOT MacDONALD: Has not each of us in this room got a responsibility to be very careful about pointing the finger at a particular perceived source and then proving that up for all those reasons? Otherwise we are going to be encouraged to spend resources on possibly the wrong causation.

Dr MACKENZIE: I think that is exactly right. We should be careful in attributing causes for the increases in PM10 and PM2.5 that are evident in those graphs. I think those graphs show that there is an issue with particulate pollution in Newcastle, in the lower Hunter in particular and in the upper Hunter as well, and that it is worthy of further investigation. We need to identify what the cause of that particulate pollution is and we need to look at potential increases where those pollution levels might be increasing. When we are talking about a more than 50 per cent increase in the amount of trains that are moving through the port we need to be looking very seriously at what the contribution of those trains is to the pollution load in an airshed that is already exceeding World Health Organisation standards.

We have never maintained that coal trains are the only source of pollution but what we have maintained is that it is only source of pollution that is likely to increase by 50 per cent in the next five to 10 years. There is not going to be a 50 per cent increase in the number of wood heaters, there is not going to be a 50 per cent increase in the sea salt particulate pollution—to the extent that you can describe sea salt as pollution—but there is going to be a proposed 50 per cent increase in the amount of trains, which means that any pollution that is currently coming from coal trains, either off the top of wagons or from the diesel particulates associated with haulage, needs to be addressed before that increase in the particulate load is inflicted upon the communities of this region.

Mr SCOT MacDONALD: If you were to go from 2010 to 2013 would it not be a fair comment to say that the most likely cause of that change would be from two very wet years of flooding and no bushfires, to two quite dry years with bushfires, particularly in 2013, driving all those sorts of dusts et cetera.

Dr WHELAN: It is a speculation. Just to introduce a little more evidence base, the National Pollutant Inventory [NPI] is an inventory of pollution maintained by the Commonwealth Government, industry, self-reports based on estimates or measurements of pollution. The coal mining industry in Australia has reported a doubling in particle pollution emissions—this is an estimate of the emissions from mines—in the last 10 years. The Commonwealth and State governments, in looking at a proposal to vary air quality standards for the country, estimate that the places where pollution is expected to increase in the next five to 10 years are both in metropolitan areas, as a result of traffic, and in coal mining areas. There is no doubt that coal mining contributes. I want to make the point, the Committee has heard from the EPA and the minerals council a great emphasis on PM2.5. I really want to impress on the Committee the significance of understanding where PM2.5 comes from and where PM10 comes from.

PM10 is larger particles and results from the creation of coarse particles—for instance, the vibration of coal against itself and machinery in mining. PM2.5 is a very much smaller by-product of combustion. When we hear that in the upper Hunter only a small proportion of PM2.5 comes from coal mining, we could have anticipated that it is not going to come from coal mining because PM10 comes from coal mining. In the upper and lower Hunter coal is a major source and the extent of exactly how much is not yet known because the upper Hunter particle characterisation study did not look at PM10 and so far we don't have the lower Hunter particle characterisation study results—we look forward to them.

Dr MEHREEN FARUQI: In your submission you said you have made representations and written letters and emails to the EPA in which you have raised specific concerns about the perceived shortcomings of

the design, conduct and implementation of the ARTC monitoring report. You also state "the only substantive response that we have received to date came via a media statement from the EPA." The EPA states that it has improved its community engagement strategy. I am interested to know what your communication with the EPA has been and that of the groups you represent?

Dr MACKENZIE: It is fair to say that we have a fairly open channel of communication with the EPA in some areas. Both James and I are deputy members of the Newcastle Community Consultative Committee for the Environment [NCCCE], which we find to be a forum for information exchange and in many ways if the purpose of that forum is for the exchange of information then it is achieving that outcome. If we were hoping for a greater level of engagement—that is to say, consultation or collaboration between the members of that group, I would say the forum has fallen down in that regard. Having said that, the issue around the explanation for the discrepancies between the draft and final reports, the explanation as to why the media plan was implemented and delivered despite the technical reports providing different information, we have not had clear communication whatsoever with the EPA. That is part of the reason why we see this inquiry as being so critical to getting an explanation as to why there is that discrepancy between what is being said publicly and what the technical reports are showing.

Dr MEHREEN FARUQI: There have been some recent changes made in legislation to risk-based licencing and an increase in on-the-spot fines. Do you think that will make any difference to the compliance as far as coal dust is concerned?

Dr WHELAN: The series of presentations the Committee has received have suggested that by implementing programs, by auditing, by commissioning reports, and even by prosecuting, the EPA has done its job, has fulfilled its charter, or has been captured by green extremists. Following the logic that John Mackenzie has presented, a pressure-state-response [PSR] model, the question is not if the EPA is keeping itself busy but what is happening with air quality? That is the mission of the EPA. Notwithstanding some of the longer term trends, the short-term trends are that air pollution in the Hunter is bad and getting worse. We have many exceedances and they appear to be increasing with frequency and, given that so much of the particle pollution is from coal, we can expect more of that in the future. The test has to be not if the EPA has 25 or 26 programs but what is the state of the air?

The Hon. LUKE FOLEY: Could I challenge you as to why there is this excessive focus on covering the wagons? Is it not the case that three other contributing factors to particle pollution from the coal mining industry are at least, if not more, significant: onsite dust, coal mine non-road diesel engine emissions, and diesel emissions from locomotives? Why do you maintain this obsessive focus on covering the wagons?

Dr MACKENZIE: We do not think that it needs to be a trade-off between the different sources of particulate pollution. We need to be addressing the actual sources which, as you correctly state, is partially due to the diesel engine, partially due to fugitive emissions coming off the top of the wagons, and partially due to the re-suspension of particulants in the rail corridor as a result of dust being deposited there and accumulating over time. In all cases those sources of particulates, to the extent that they contribute to the problem, need to be addressed. We are not experts in coal haulage. We rely on industry documents that we have looked at in particular—we will refer to the reports again: the Katestone report, commissioned by OEH, to determine best practice for dust mitigation, and the Connell Hatch study, commissioned by the Queensland Resources Council to evaluate the various options for mitigating against coal pollution from coal trains.

Those are our sources of information and what is consistently reiterated in those is that covered wagons reduce the extent of coal pollution coming off the tops of wagons by 99 per cent. That is the best available information we have. We have stated it many times publicly and we are yet to have that information contested in the public sphere by either industry or the EPA. I guess the key issue that we are looking to address is if there is a better solution then let's identify what that is and let's focus our attention on addressing the problem of particulate pollution and its cause. We don't support a cheap and ineffective solution any more than we support a disproportionate solution but, until we have the information about which of those approaches addresses the problem and delivers those air quality improvements for people living near the coal corridor, we need to advocate the precautionary principle of saying not having full information is not sufficient to prevent any kind of regulation. So we need to say: On the basis of what we have covering coal wagons is the most appropriate solution to deal with the problem.

The Hon. LUKE FOLEY: The minerals council tells us that it would cost between $10,000 and $15,000 to cover per coal wagon. What is your understanding of the cost impact on the coal industry if the regulator were to require them to cover their wagons?

Dr MACKENZIE: Again this information comes from that Connell Hatch report that was commissioned by the Queensland Resources Council. They proposed a lease arrangement that would cost $5 to $10 per wagon per trip. That is the indication they have for the cost of covering wagons. That again is the best information we have available. As much as the Committee is looking forward to more accurate cost assessment from the minerals council, so are we. Again, we have used this figure many times in the public domain and we have yet to see any contestation as to an amount greater than $5 to $10 per wagon per trip.

The Hon. Dr PETER PHELPS: Are you aware of the Carrington five-day survey in relation to air quality done in December 2012 by the Coal Terminal Action Group Dust and Health Steering Group [CTAG-DHSG]?

Dr WHELAN: Yes, we conducted that survey.

The Hon. Dr PETER PHELPS: I refer you to the readings of site 4 Garrett Street, Carrington, which showed that there were elevated PM10s level when the winds are from the north-east and the south-east. How do you account for that being coal dust when the closest coal stockpile is located directly to the north? Would that not tend to indicate that sea salt is a far more important contributor to elevated PM10 levels?

Associate Professor HIGGINBOTHAM: The study set-up the Osiris monitoring equipment in those yards and various places. The one in Carrington was situated probably about 500 metres from the coal stockpile. You are right that it was directly sort of north-west of that residence. I think there were other industrial activities which occur around the port that contributed to the very high levels. We found, I think, at least two readings that were 80 micrograms per cubic metre of the PM10, which is well above the 50 daily standard—and we acknowledge that this was a Osiris instrument, not a TEOM.

We had a look at that and we had a look at also the readings for Henry Street in Tighes Hill, which is also in direct line due west of the coal loader and also the rail line, and I think we got a general picture that when the winds were coming from those sources, the rail sources and coal loader sources, that we were seeing elevated particulates, but it was a more general thing. The winds contributing to the high levels of winds were coming from a number of directions, from north down to south-east.

The Hon. Dr PETER PHELPS: Just going to Henry Street, Tighes Hill, which is located south-west of the Carrington coal store, does that not also show that high levels of particulate matter occurred when the winds came from the north, the south-east and the north-west—in other words, three compass points which were not in a direct line with the coal dock at Carrington? Again, would that not tend to indicate that particulate matter from non-coal sources have greater impacts on that than the coal did?

Dr WHELAN: Our understanding is that the terms of reference for this study relate to the EPA's response to the ARTC's study. This was a study that was undertaken by the ARTC in compliance with their licence conditions. To focus on some shortcomings of a community-funded study commissioned for a different purpose at a different time that is outside the terms of reference of this study would seem to be a distraction.

The Hon. Dr PETER PHELPS: I just wanted to make sure that people realise that there are significant concerns in the implications that can be drawn from particulate matter from coal dust on your own surveys.

CHAIR: Order! Witnesses, we take a lot of evidence here that is well outside the terms of reference of these committees. Unfortunately, we are out of time.

Dr MACKENZIE: I can address that question very quickly. Henry Street is one street away from where I live; it is 20 metres from the coal rail corridor. We have not suggested any causality between those readings and coal dust, but certainly it is not close to the Carrington coal dump but it is a very short distance from the coal train line.

CHAIR: Thank you very much gentlemen. The committee appreciates your coming here today to give us your evidence. If there are any questions that were taken on notice the secretariat will write to you and make

sure the questions are clear and if we could have answers to those questions within 21 days of your receiving them we would very much appreciate it. Once again, thank you for your expert evidence.

(The witnesses withdrew)

MEREDITH LOUISE LAING, Director, Environment Division, Hunter Councils, and

BRADLEY STEPHEN NOLAN, Regional Program Manager, Hunter Councils, affirmed and examined:

CHAIR: Before we proceed to questions, would either of you like to make an opening statement?

Ms LAING: As you can tell, the Hunter Councils' submission touched on a range of issues. The input sources for this particular submission were from a group of councils who indicated to the CEO of Hunter Councils that they would like to use the organisation as a vehicle for a joint submission and we understood that a range of other councils were going to make individual ones. So this really is a submission that represents the views of a subset of councils. Overall, as I said, you can tell it touches on a range of issues but in relation to air quality, councils are concerned that the ongoing community concerns regarding the issue in the Hunter are highlighted in a recent community survey for Singleton Shire Council. The survey was commissioned for a sustainability study for the organisation and unprompted questions about environmental concerns. In that particular LGA, air quality was their number one concern by far amongst the community.

Councils also believe that a more comprehensive network of public air quality monitoring stations is justified that are capable of monitoring the full range of air pollutants of concern to communities and that they should be installed throughout the region. Lake Macquarie Council noted that it has lobbied the EPA for some 10 years to have more air quality stations implemented in that LGA, to no avail. A large part of the submission also related to councils' concerns around the relationship they have with the EPA and the desire for a higher presence of EPA officers, particularly in the Upper Hunter, and to see the range of consent authorities working more closely together in that area to ensure consistency in monitoring activity, compliance provisions and development consent conditions across a region.

Like the Minerals Council mentioned earlier today, there appears to be quite a bit of community confusion around who the consent authorities are in the region, particularly in relation to coalmining, whether the appropriate authority is the EPA or the Department of Planning, which variously respond to issues.

CHAIR: Just a point of clarification: Was the suggestion that there be a higher concentration of offices or officers—in other words, permanent installations?

Ms LAING: Officers, as it was quoted to us.

Dr MEHREEN FARUQI: Thank you very much for coming here to present your evidence. In your submission you state that councils have noted that the EPA appears to be more likely and willing to issue infringements to councils than enforcements to industry. Could you just expand on that a little bit?

Ms LAING: They are much more concerned about the focus on councils and waste and stockpiling and landfills. There is a perception that the EPA has a lot more concern about that than it does have in terms of the consistency of approach it is taking to compliance in mining in the Upper Hunter.

Dr MEHREEN FARUQI: You also note that there is significant community concern regarding coal dust levels within the Hunter region. We heard today from the NSW Minerals Council and the EPA and in their submissions they have downplayed the significance of coal dust in the wider air pollution. How do you think the EPA's response to community concerns can be made more effective?

Ms LAING: From what I understand from the feedback we have got from councils, a higher presence and profile within the Upper Hunter, a more open and regular contact with the community and councils about the range of issues that are being raised by the community in the Upper Hunter and I guess everyone has suffered from the apparent inconsistency in reporting around the causality with air pollution and the EPA's response. Councils would like a much closer working relationship with the EPA, a lot more communication and information coming forth, particularly when they are involved in any sort of regulatory monitoring or compliance activities, to be made aware of that. Councils feel that they are often the front line with community concerns but are quite unprepared to respond to those in many instances; they are not always aware of what the EPA is doing or the information that they are privy to.

Dr MEHREEN FARUQI: To increase that consultative approach and the EPA to have a more discernible and visible public presence, do you think the EPA requires more resourcing in terms of funding and staffing, particularly for the Hunter region?

Ms LAING: It would appear that councils believe more resourcing and more staffing is required. I do know anecdotally that councils felt that the EPA's response, for example, to the smoke campaign that they were trying to promote in the Upper Hunter, they believe it was well underresourced to achieve any sort of significant outcome. I guess that was a pretty good example of a major issue in the Upper Hunter of main concern to the community and a very small amount of money thrown at an issue that could be perceived to be a side issue to the broader air pollution issues coming from mines.

I think experience shows that you need quite dedicated officers in the Upper Hunter inspecting smoky chimneys, engaging with the community where they notice these are occurring and educating people, the householders, into how to manage that sort of issue is the appropriate response, as well as making sure education and information is disseminated to retail stores and the like. A $60,000 grant does not really pay for a full-time officer to do the kind of job that they need to do to engage on that particular issue. I guess that is one example where councils felt the EPA was either underresourced or was underresourcing the issue.

Dr MEHREEN FARUQI: I just want to explore the wood smoke a little bit more because I have concerns from so many constituents about wood smoke and it does seem to be a major cause of air pollution. Is there any other program other than education through the EPA, such as providing funding to householders to be able to replace their heating equipment?

Ms LAING: I think many councils would argue that they are fairly resource-strapped, particularly the smaller rural councils with a relatively low rate base. I think in a range of issues that they are managing and dealing with and responding to in the Upper Hunter I do not believe they would feel they have the resources to adequately do that.

Dr MEHREEN FARUQI: But would that be a good strategy? You have already said increased funding. What would you recommend the funding be used for in terms of the EPA and wood smoke pollution?

Ms LAING: Certainly resources that can be directed towards good, accurate information driving a program would be important. I think investment in officers who can engage with householders. It is one of those issues that you might put brochures and ads and notices in newspapers, but it is really only engaging people one-to-one and being able to demonstrate to them the source of the problem and how to manage it properly is probably the only way to do it. I think many householders would not even be aware that they are managing their fires inappropriately and that they have got smoky chimneys that are creating pollution. Serious resources to get those officers on the ground engaging householders directly is probably going to be the most effective method, in my view.

Dr MEHREEN FARUQI: You note in your submission also that Lake Macquarie Council has been lobbying unsuccessfully for several years for the EPA to install air quality monitoring stations across the region. Can you explain why the council has been lobbying for that and why has there not been any success?

Ms LAING: I cannot explain why there has not been any success but Lake Macquarie Council feels they have two operating coal-fired power stations in their LGA, they have 11 mining operations active in their LGA, it is a high motor vehicle using population and Lake Macquarie also believes that they are affected by emissions from surrounding LGAs and industry. They have long felt that they have an issue there that they need to get on top of or that they want to get on top of and because of the absence of any public monitoring stations within their LGA they have been unable to actually verify the issue and therefore respond to it.

Dr MEHREEN FARUQI: Has the EPA given any formal responses to you about why they will not fund this program?

Ms LAING: I am sorry, I would have to take that one on notice. I do not have that information at hand.

The Hon. GREG DONNELLY: Just for the record, could you identify which councils make up the Hunter Councils organisation?

Ms LAING: Lake Macquarie, Newcastle, Port Stephens, Cessnock, Maitland, Gloucester, Dungog, Singleton, Muswellbrook, Upper Hunter and Great Lakes.

The Hon. GREG DONNELLY: In regard to matters that fall within the remit of the EPA in terms of environmental issues—and I use that in the generic sense—is it the experience of the councils that complaints or concerns are raised directly with councils by citizens within the local government area? In other words, instead of going to the EPA, councils deal with these environmental issues on a reasonably regular basis?

Ms LAING: I think that is fair to say. I think a number of community members are aware of the EPA hotline and will call the hotline around issues. But I think it is fair to say that councils, just by nature of their roles, have a lot to do with community members in their day-to-day operations, and they feel that they are on the receiving end of a lot of complaints and queries around environmental issues.

The Hon. GREG DONNELLY: And who would those queries typically be directed to? Within each council is there an environmental department that would normally field those sorts of questions?

Ms LAING: It does vary with councils. Some councils have up to 1,000 staff and some have only 60. So it would vary greatly amongst councils.

The Hon. GREG DONNELLY: In your submission at page 2 in the last paragraph under the first underlined heading it says:

> A number of councils indicated the troubles they have in accessing technical guidance and advice as well as receiving timely response from EPA officers on issues and referrals.

Was that a strong response or a response from across a number of councils when you were putting the submission together or was it more of a concern of maybe one or two of them?

Ms LAING: It was certainly consistent amongst the councils we spoke to regarding this inquiry. I have a sense that it was much stronger amongst the smaller councils. They cited a number of different regulations where new responsibilities were being put to councils—one of them I think was the underground petrol storage system regulations. Many of those councils, and we have heard this repeatedly, do not have the expertise internally to address these issues and they have struggled to get timely assistance from the EPA in responding to a number of these things.

The Hon. GREG DONNELLY: Just to help us to understand a bit better, do they explain how this came about? Would they make contact with the EPA and just find that there was not someone they could speak to who had the answers? Or was there a delay of some sort?

Ms LAING: They spoke about various delays in getting any response at all. Or they would ring needing specialist advice and there would be a struggle to get that specialist advice. There was an example given around noise guidelines which were recently upgraded. A number of our smaller councils were struggling to understand how to follow the guidelines, let alone how to build a case for prosecution. They are just finding that they really want training and some sort capacity building or professional development upfront when new guidelines come through. They want detailed guidelines and they want to be able to at least have someone at the end of the phone, if not locally, who they can get more expertise and advice from to deal with the issues. It was pretty consistent with the smaller councils in particular that they thought they really just did not have the resources and their requests were falling on deaf ears in terms of getting the sort of assistance they were looking for.

The Hon. GREG DONNELLY: Following on from that, I gather this is what you are getting at in the paragraph above the one I quoted earlier. It talks about councils wanting to see a "stronger partnership approach". Is that what you are getting at—the perception of at least some of the councils that they want to have greater continuity in the way in which they are able to engage with the EPA on environmental matters that fall within the their local government area?

Ms LAING: Yes, that is right. I think they want it in two ways. They want a more consistent, coordinated and reliable relationship with the officers so that when there is an exchange of information or expertise it is a little more forthcoming. They also believe there is community confusion around the relative roles and responsibilities of the various consent authorities, including the EPA and councils. They believe it would be advantageous if there was a clear understanding of the relative roles and responsibilities, a partnership

approach rather than a punitive approach to a lot of issues before they become major problems, and a consistency in the way both council officers and EPA officers consult with the community and respond to issues.

The Hon. GREG DONNELLY: Were they suggesting that the EPA is taking a more punitive approach? Were they going that far? Or were they just making a general observation?

Ms LAING: We did not get a lot of specific examples around that particular issue. It appeared to be more a general observation that the EPA might be quick to impose a fine or to raise an issue when they saw a problem but they were not as quick to, for example, proactively work with councils to try to avoid one by running a joint education campaign and resourcing that appropriately.

The Hon. GREG DONNELLY: In regard to the air monitoring stations across the region, does your organisation have a view about where those stations actually should be placed to produce the standard of monitoring that you are looking for?

Ms LAING: I do not believe Hunter Councils has a position on that, but I feel that some of the individual councils may well.

CHAIR: Like Lake Macquarie, for example?

Ms LAING: Yes, like Lake Macquarie. We would be happy to follow that up if you want more information on that.

Mr SCOT MacDONALD: I would like to go back to some of your earlier comments where you said that it is not clear to you why they make certain prosecutions in certain areas—landfill versus resources is what I wrote down. Would it help if the EPA were better at explaining what their priorities were for each year or each three-year period and what they see as threats to human health and the environment? Therefore they may chase landfill issues rather than old underground petrol tanks, for example?

Ms LAING: I do not know whether what their priorities are in the next three years is the issue or whether it is actually just a matter of being very clear about what the priorities across the board are, what the relative roles and responsibilities of the different State agencies and councils are, and making that very clear to everybody involved—the community as well as the councils and agencies. If we want to raise the standards around landfill or a whole range of other issues then we need to set the bar and give people time to reach it. We need to build capacity to get there, and get there efficiently and effectively, rather than bringing in a new regulation or assigning new responsibilities and not really providing the support to roll it out in an effective way. I wonder whether Mr Nolan would like to raise a couple of examples in the waste area.

Mr SCOT MacDONALD: Before we get to that I will ask my question in another way. Is the EPA chasing landfills because they are a greater threat to the environment than coal trains or whatever? If that was clearer to you, would that help councils and the community?

Ms LAING: Possibly. I will hand over to Mr Nolan because he is certainly across the waste area.

Mr NOLAN: I think the most appropriate response is that there is a lot of work being done at the moment around risk-based assessments of priorities and health impacts. I think it would be a very interesting study to actually look at the number of penalty infringement notices [PINs] that are going to councils and/or private citizens or companies that sit in those risk registers. One could quite easily look up the PINs that have been issued on the Central Coast and to the coastal councils in our region as they relate to stockpiling on old waste facilities and compare that to any exceedances through air quality or other human health impacts.

I think there would most likely be some correlation showing that potentially fines are going to areas that are not as toxic to human health. As you say, it may well be appropriate if there was some sort of standard or some communication from the EPA as to what their targets are and where they would like standards to be improved. I guess the information we have received over a number of years around some of those PINs or prosecutions that councils are receiving, specifically for waste stockpiling, does not appear to be linked to human health or any considerations along those lines whatsoever. A cynical person may suggest that it is linked to the generation of income through the waste levy.

Ms LAING: If I could just add to that, councils deal with the EPA on a daily, weekly and monthly basis at various times. There have been a number of issues where they have had real concerns, and there was one raised in the upper hunter about a concrete batching plant and asbestos. The council involved was unable to get the EPA's attention to assist them in that particular matter, and yet it might receive a PIN for a stockpile down the road. It just does not seem to make a lot of sense or to show a consistency in approach.

CHAIR: Has the EPA at very senior level, either via the chief executive or someone like that, addressed either your regional organisation of councils or the Local Government NSW conference? What sort of high-level opportunities are there for the EPA to actually flesh out some of the policy issues that your submission has raised—that is, a lack of understanding amongst the councils about where the EPA wants to go?

Ms LAING: The general managers meet monthly in our organisation so that is one forum. The mayors and the board of Hunter Councils meet every couple of months. There are certainly plenty of predictable and consistent events where the general managers, the mayors and the councillors get together on a regional basis. I believe they would really welcome input from the EPA. When the EPA was launching the new waste strategy it was very anxious to get a regional Hunter-Central Coast Regional Illegal Dumping Squad set up. There was plenty of attention then and a reasonable number of visits from senior-level executives from the EPA. But on these ongoing issues around compliance, regulation, and timely and consistent responses to issues such as mining in the upper Hunter there is less of an active visitation schedule, shall we say.

CHAIR: Thank you, there is a bit hint in there.

The Hon. Dr PETER PHELPS: In relation to the number of air quality monitoring stations I cannot think of any place in New South Wales which is more densely packed with air quality monitoring stations than the Hunter. Up near Denman there are monitoring stations at Wybong, Aberdeen, Muswellbrook, Muswellbrook, Jerrys Plains, Warkworth, Bulga, Maison Dieu, Camberwell and Singleton.

CHAIR: This is like that song *I've been everywhere, Man.* Is there a question in there somewhere rather than a song?

The Hon. Dr PETER PHELPS: How many more stations do you want to give some sort of assurance in what is already literally the most densely packed area of air monitoring in New South Wales?

CHAIR: Lake Macquarie for one.

The Hon. Dr PETER PHELPS: I will put that hypothesis to the witnesses. If you were to put one in at Lake Macquarie then how would you assure yourself that you are not simply picking up sea spray?

Ms LAING: I cannot answer that particular question.

The Hon. LUKE FOLEY: You could put it at West Wallsend.

Ms LAING: I think the councils' position is that generally if there are that many monitoring stations and they are working effectively then why do we continue to have the level of community concern that we do?

The Hon. Dr PETER PHELPS: As an organisation does Hunter Councils have any concerns about coal dust or concerns about the new terminal T4 coming online?

Ms LAING: I cannot answer on behalf of Hunter Councils the organisation. The board would need to put forward that sort of position.

Dr MEHREEN FARUQI: Does Hunter Councils have a view on how to address coal dust pollution? For example, do you believe that coal wagons should be washed and covered?

Ms LAING: I would have to take that on notice—I have not been briefed by the organisation. We got submissions from individual councils and put them together in a collective submission. But I do not have a formal position from Hunter Councils on that particular issue.

Dr MEHREEN FARUQI: Would you be able to take that question on notice?

Ms LAING: I would be very happy to do that.

The Hon. Dr PETER PHELPS: I have one further question which I will put on notice.

CHAIR: There you see the value in having a very detailed submission. There being no further questions, I thank the witnesses for their time and call these Newcastle hearings to a close. I thank the witnesses from Hunter Councils for the evidence given. The secretariat will send questions on notice to you in writing. The Committee would appreciate it if we could have the answers back within 21 days. In closing I thank all the participants today. This is obviously an issue that is very much at the forefront in the minds of members of the communities concerned. Thank you for very much for your cooperation, your hospitality and for coming today.

(The witnesses withdrew)

(The Committee adjourned at 4.14 p.m.)