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Hazelwood Mine Fire Board of Inquiry
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Dear Board Members

Hazelwood Mine Fire Inquiry - Additional observation by the State

1. This letter is provided in response to the invitation to the State from the Board on 17 June 2014 to set out in writing by 4.00 pm on 23 June 2014, any submissions the State wishes to make in answer to proposed adverse findings suggested by Counsel Assisting the Inquiry. In doing so, we also address relevant matters from the submissions of Counsel Assisting and counsel for the other parties granted leave to appear at the Inquiry.

PRELIMINARY OBSERVATIONS

2. Counsel Assisting have made certain recommendations. Except where the recommendations contain or imply adverse findings against the State, or where the State considers the recommendation is premised on errors or misconceptions, the State will respond to such of those recommendations as are adopted by the Board and recommended by it when the Board has reported.

3. Some of the recommendations of Counsel Assisting suggest that particular State agencies should take certain actions. To the extent the Board resolves to adopt and, in turn, to recommend those or similar actions, the State submits that the Board should recognise that it is a matter for government to determine which agency is most appropriate to have responsibility for giving effect to any particular recommended action and the timing of that implementation.

4. The fact that it might be desirable to do something in the future does not mean that there has been a failure in the past, and in these cases failure with respect to the past should not necessarily be concluded or implied in the Board's final report.

5. It is recognized that the closing submissions of Counsel Assisting and of counsel for the other parties were made without the benefit of the State's second submission to the Board. The State's second submission addresses various matters that relate directly to matters raised in the closing submissions of Counsel Assisting and counsel for other parties and the State asks the Board to have regard to that second submission in its consideration of those matters.

THE NATURE OF THE EVENT

6. Counsel Assisting told the Board, "The fire was unprecedented in terms of its size and its impact on the community of Morwell and the broader Latrobe Valley; in every other respect the fire was not unprecedented."[1] She later said, "It was an entirely foreseeable event and it was one that should have been planned for."[2] As the State pointed out in paragraph 9.13 of its second submission, the risk of offsite impacts of the kind experienced by the Morwell community from a large, sustained fire in worked out batters was not foreseeable and accordingly not anticipated and prepared for. Neither the 1944, 2006 nor 2008 reports on the mine fires had identified additional impacts of the fires on the nearby communities as a foreseeable risk. In addition, the unprecedented size of the fire and its impact on the community did not become clear until on or after 15 February 2014.

7. Despite what was said by Fire Services Commissioner Lapsley on 9 February 2014, the communications witnesses as well as other witnesses have all said that the nature (as well as the magnitude) of the event changed, and that the messages had to change with it. Fire Services Commissioner Lapsley himself determined on 13 February 2014 that this fire should have a hazardous materials (**HazMat**) overlay applied to operations, which he says influenced the way in which the event was dealt with by the emergency services from this point onwards.[3]

8. It is not the case that the relevant entities did nothing in the first week of the fire—in fact, senior people and experts from key agencies visited and made assessments and air quality monitoring had commenced. There was a response proportionate to what was happening.[4] To suggest or imply that the nature and scale of the response from 10 to 14 February 2014 should have been matched to the nature and scale of the incident as it subsequently developed during the period 15 to 17 February 2014 and beyond, would require response to every emergency incident on the basis of the worst conceivable outcome, regardless of its likelihood.

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[1] Counsel Assisting closing submissions, T2337: 25-8.
[2] Counsel Assisting closing submissions, T2338: 14-6.
[3] Statement of Lapsley, paragraph 128 (exhibit 1).
[4] See, for example, Statement of Lapsley, at paragraph 127 (exhibit 1) where the Commissioner refers to visiting Hazelwood on 12 February 2014. The Commissioner, at paragraph 125(exhibit 1), also refers to the Chiefs of the County Fire Authority and Metropolitan Fire and Emergency Services Board attending the mine on 10 February 2014.

THE FIRE IN THE MINE AND THE RESPONSE

GDF Suez responsibility in relation to fire in the mine

9. Contrary to what is implied by GDF Suez,[5] GDF Suez was not without responsibility for suppression of fire at the mine.[6]

10. The *Country Fire Authority Act* 1958 does not cast on the Country Fire Authority (**CFA**) a singular statutory duty or obligation with respect to fire suppression but it does impose a duty for owners and occupiers to extinguish fires on their land during fire danger periods.[7] And, as the Fire Services Commissioner observed in evidence, no private operator has a guarantee that fire services will be available or dispatched to that operator's property or facility in the event of fire.[8]

11. GDF Suez asserts that limited assistance from, and limitations in the initial response by, the CFA was a principal reason for the failure to contain the fires at the mine on 9 February 2014[9] and a key factor why certain fires burned for 45 days.[10] The State submits that there is no evidence supporting any such conclusion by the Board.

12. **Pre-planning**: As Counsel Assisting recognizes[11] there was sufficient pre-planning by State agencies and this assisted in guiding the emergency response.

13. This included a draft Regional SOP — Latrobe Valley Open Cut Coal Mines – Response to fires (version 7a)[12](Draft Regional SOP) which was referred to in the Fire Services Commissioner's supplementary statement of 22 May 2014.[13]

14. There was significant Brigade-level pre-planning in the form of the Morwell Brigade plan. This identified key premises and provided strategic and other information in relation to premises such as the mine. To some extent, the information in the plan was circumscribed so as not to compromise security at sites such as the mine which are potential terrorist targets. Additional local knowledge and situational awareness were provided by Brigade-level site visits by CFA personnel. Joint exercises between the CFA and the mine operators were carried out on a regular basis, with the most recent being 11 December 2013. These matters are discussed in the VGSO letter to the Board dated 12 June 2014.[14]

15. **The pre-positioning of aircraft and other assets**: The Fire Services Commissioner has not supported the pre-positioning of air support permanently in the Latrobe Valley or in any other particular location. Aircraft are a limited resource, and they

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[5] GDF Suez Submission, paragraph 119.
[6] *Country Fire Authority Act* 1958 (Vic), s. 20.
[7] *Country Fire Authority Act* 1958, section 34. This duty runs in parallel to the ordinary common law duties attending upon occupiers in relation to the duty to ensure that their land use does not adversely impact upon neighbouring land users.
[8] T113: 3-14.
[9] GDF Suez Submission, paragraph 101(c), T2508.
[10] GDF Suez Submission, paragraph 110(c).
[11] Counsel Assisting closing Submissions, paragraph 1.2(10) 2.1(1).
[12] FSC.0011.001.0133.
[13] Supplementary Statement of Lapsley , at 11 (exhibit 26).
[14] Referred to by Counsel Assisting at T2288: 23 to 2289: 2 (that passage refers to the document being tendered but there is no specific exhibit number for the letter listed in the transcript).

are best pre-positioned where, in the context of dynamic decision making every summer, they can be most effectively used, based on State-wide needs and priorities.

16. In relation to the specific suggestion that increased aircraft capability could have improved CFA preparedness,[15] the State would observe that this is either speculative or an attempt to provide expert evidence in the submission that has no basis in other evidence before the Board.

17. Regarding the pre-positioning of other assets and facilities,[16] the Board is referred to the evidence of the Fire Services Commissioner.[17]

18. The State also suggests that if GDF Suez is surprised that a compressed air foam system does not form part of the CFA and Metropolitan Fire Brigade (**MFB**) standard fleets,[18] the State is no less surprised that compressed air foam system (**CAFS**) does not form part of GDF Suez's firefighting capacity within the mine.

19. **The pre-deployment of assets:** Despite what might be suggested by GDF Suez[19], the pre-deployment of assets by fire services agencies was timely, adequate and appropriate in view of the competing strategic priorities both across the State and in CFA regions 9 and 10. This predeployment reflected the priority given to primacy of life and property.

20. This is dealt with in detail in the Fire Services Commissioner's statement of 20 May 2014,[20] in particular, in Part B of that statement which dealt with the circumstances of the fire, including the weather leading up to 9 February 2014, and the existing fires in Victoria as at that time and level of risk to life and property across the State and in CFA regions 9 and 10.[21] In oral evidence, the Fire Services Commissioner addressed this on Days 1 and 5 of the hearings.[22]

21. The statement of Incident Controller Lawrence Jeremiah of 22 May 2014[23] also touched on these matters.[24] Mr Jeremiah's oral evidence also affirmed this (see, for example, some discussion of the redeployment of air assets away from the Hernes Oak fire where life was being threatened by the Jack River fire).[25] The threat to Australian Paper Mill (a Major Hazard Facility), power generators, Yallourn Open Cut and the people of Morwell also had to be taken into consideration.[26]

22. **The emergency response by fire services agencies**: The emergency response by fire services agencies was timely, adequate and appropriate in view of the competing strategic priorities both across the State and in CFA regions 9 and 10.

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[15] GDF Suez Submission, paragraph 128.
[16] GDF Suez Submission, paragraph 134.
[17] See generally, Statement of Lapsley, in particular, paragraphs 21-2 (exhibit 1).
[18] GDF Suez Submission, paragraph 132.
[19] GDF Suez Submission, paragraph 134.
[20] Statement of Lapsley (exhibit 1).
[21] Statement of Lapsley (exhibit 1).
[22] Lapsley T19 to 42 and T659 to 667.
[23] Statement of Jeremiah ([VGSO.0004.009.0040])(exhibit 15).
[24] Statement of Jeremiah at paragraphs 11 - 30(exhibit 15).
[25] Jeremiah T464: 19 to 26. See also T481: 5 to 18 which deals with these priorities.
[26] Statement of Jeremiah, paragraph 68 (exhibit 15). Jeremiah T477: 3-12.

23. The principal evidence led in support of this proposition, at least as regarding the first response, is the evidence referred to above of the Fire Services Commissioner and the evidence of Lawrence Jeremiah. The Fire Services Commissioner, early on in the mine fire, understood that this fire was going to be complex.[27]

24. As regarding the response apart from the initial response, the response strategy was varied and refined, as appropriate, as the response changed from initial containment to getting the fire under control and then to being safe.[28] Appropriate resources were deployed. A performance management structure was adopted to ensure that progress was being made[29] and an expert panel was also convened, in the Fire Services Commissioner's words, to 'peer review the strategies and show success and offer up different solutions and test what we were saying in an open forum'.[30] As the other fires in CFA regions 9 and 10 and other parts of the State were brought under control, additional resources were deployed. A range of techniques and assets were used to hone the system of work used to suppress the fires.[31] A CAFS was successfully deployed after being tested and having its effectiveness assessed and a system of work implemented around its use.[32]

25. There were significant issues with water reticulation and hydrogeological stability in the mine which added a level of complexity to the response activities.[33]

26. There were no deaths in the mine fire or other fires in CFA regions 9 and 10 or across the State during this particular campaign.[34]

27. **Providing and explaining to GDF Suez the Phoenix modelling**: GDF Suez was on notice about the risk of a significant fire event. Regardless of what Phoenix modelling was provided,[35] to complain about absence of explanatory material relating to Phoenix modelling[36] which was provided to GDF Suez is to ignore the fact that if GDF Suez personnel did not understand what they received, then they also failed to ask for explanation of it.

28. **Fire fighter safety**: Fire fighter safety was identified as an issue early in the response to the mine fire and was properly handled. A proactive and adaptive approach was adopted in this regard.

29. Counsel Assisting has made submissions in this respect that are critical of the fire agencies.[37]

30. Each of the State agencies have duties as an employer, and otherwise with respect to the conduct of their undertakings, pursuant to the *Occupational Health and Safety Act* 2004 (Vic). The State agencies meet these duties in different ways and have different work practices, due in part to their different operational risk environments

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[27] Lapsley, T61-2, in particular, T61: 8-12.
[28] Lapsley, T137- 47.
[29] Lapsley T75-6.
[30] Lapsley T143: 25-8. See also, generally, T143 -47.
[31] Lapsley, T57-9. Barry, T552-79.
[32] Barry, T562 to 84. Hayne, T590 - 5.
[33] Lapsley T79- 80 (regarding stability) and T74 -6 (regarding reticulation). Barry, T574 - 7.
[34] Lapsley, T114: 1-5.
[35] Jeremiah T512-21.
[36] GDF Suez Submission, paragraph 64, T2503.
[37] Counsel Assisting closing Submissions, 3.3(1), 3.3(3).

and their different workforces. The Board has not received detailed evidence about those different practices, and nor has Counsel Assisting sought to explore such differences with witnesses.

31. The State does not accept the submissions at paragraph 3.3 (3) regarding carbon monoxide (**CO**) exposure of firefighters. It is submitted that the Board is unable to make such a general finding, given the evidence before it. The submission at paragraph 3.3 (3) has four components, being that there was poor communication, confusion, policy on the run and sub-optimal responses. Dealing with these in turn:

31.1 There is no evidence before the Board that there was poor communication about CO exposure procedures between MFB and CFA, or between each agency and their workforce. Accordingly, this proposed finding is not supported by the evidence.

31.2 There is no evidence available to the Board that personnel were 'confused' with respect to CO exposure issues. Counsel Assisting may have based this suggestion on either:

(a) the unsupported and untested assertion by the United Firefighters Union (**UFU**) that "the [CO] protocols were not consistently applied were difficult to apply in practice"; or

(b) the evidence quoted at paragraph 21 on page 27, which relates in part to the statement by the MFB witness Mr Katsikis about the CO protocol.

31.3 Mr Katsikis was not asked whether firefighters were 'confused' by the change in CO protocol. He agreed in evidence that the protocol was a 'work in progress'[38] and that he understood that the IMT needed to input into the plan to refine it.[39] The Board cannot make a finding about the fire agencies demonstrating confusion about this matter without having put the matter to representatives of the fire agencies during the hearing. The acknowledgement by the Fire Services Commissioner of the 'potential' for confusion does not represent a concession that there was 'demonstrated' confusion in practice.

31.4 There is no evidence that MFB or CFA were involved in 'policy on the run' with respect to CO exposure. To the extent that the Board has heard any evidence on this matter, Mr Katsikis's evidence cited above refutes the suggestion that the CO protocol was developed in an inappropriate way. There is no evidence before the Board that the document should not have been developed in this way, or that there is some best practice that requires it to be developed at State level without seeking input from different levels of operational decision making.

31.5 The State does not agree to the suggestion that either CFA or MFB were involved in sub-optimal responses with respect to CO exposure of their

[38] Katsikis, T536: 1.
[39] Katsikis, T536: 7-10.

firefighters and the Board is unable to make such a finding based on the evidence before it.

32. Fire fighter safety was an issue front and centre from the first day of the incident. The handwritten Incident Shift Plan for 10 February 2014, prepared on 9 February 2014, dedicated approximately one and half pages out of a total of nine pages (excluding the cover page) to this issue.[40]

33. The principal evidence led in support of this proposition is the evidence of the Fire Services Commissioner and, in particular, his statement of 22 May 2014. His supplementary statement details the very early interventions and steps taken to address fire fighter safety. It also details various layers of oversight in this area that were quickly put into place to monitor emissions, monitor personnel via health checks, review the safety procedures in place and to assess the compliance of personnel with the procedures.[41] This was confirmed in the Fire Services Commissioner's oral evidence .[42] The Fire Services Commissioner's oral evidence described a proactive and adaptive approach on the part of the fire agencies to health and safety throughout the incident.[43]

34. In re-examination by Counsel for the State, the Fire Services Commissioner indicated that of approximately 7,000 individual records kept in relation to the mine fire, there were only 23 WorkCover claims made.[44]

35. The health monitoring process implemented was considered the largest of its type ever completed worldwide, with 60,283 individual checks carried out.

36. **Health testing of firefighters**: Contrary to suggestions from the UFU, firefighters were tested with Masimo CO Oximeters and not pulse oximeters. Masimo CO Oximeters test both oxygen and CO in the bloodstream.

37. Some initial results using the Masimo CO Oximeters were being tainted due to residual CO dust on individual's fingers (because those being tested did not have sufficiently clean hands prior to the test). A further issue, also corrected after a couple of days and following consultation with the manufacturer, was the effect on the testing that arose from variations attributable to poorly filtered electrical wiring in the testing area, which caused the fluorescent lights to flicker. This was readily solved by placing towels over the hands of firefighters being tested.

38. All members in the medical tent held qualifications at or above the CFA Health Support Team minimum requirement (which is to have basic first aid qualifications). In the first week, these included members with qualifications such as Bachelor Health and Exercise Science and Diploma Health Science (Ambulance). From the second week onwards nurses with specialist qualifications in the Intensive Care Unit, Critical Care Unit and Emergency were included in the team.

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[40] Handwritten incident shift plan for the day shift on 10 February 2014 ([CFA.0007.001.0001]). See, in particular, page 5, 6 and 9 (those numbers including the covering page) of the incident shift plan.
[41] Supplementary Statement of Lapsley (exhibit 26) .
[42] Lapsley T676-726.
[43] Lapsley T677: 29 - T678: 11 and T679: 17-23. See also, Supplementary Statement of Lapsley at 54.1 to 54.2 (exhibit 26).
[44] Lapsley T726: 5-15.

39. **Concern that the SOP had not been finalised and implemented prior to 9 February 2014**: Even though the draft SOP had not been formally approved before 9 February 2014, it was in a form which was readily able to be used and implemented on that date. On 9 February 2014, it was therefore inserted into the incident shift plan for the day shift for 10 February 2014 and remained part of the operational rules throughout the fire, so that the delay had no practical or legal consequences.[45]

40. **Matters particular to the submissions of the UFU**: The State notes generally that in relation to nearly all the submissions of the UFU relating to matters other than those already referred to, there is no sufficient basis for the Board to make any findings. These matters have not been the subject of oral evidence or cross-examination and their truth has not been tested. The substance of many of the allegations has not been put to the CFA witnesses or to the one witness from the MFB.

41. Further, where the UFU submissions refer to the experience of 'firefighters' they do not indicate whether these are the work practices of the CFA, the MFB or the agencies jointly. Mr Marshall himself noted that, in many instances, CFA and MFB have different practices. In fact, the Board has no evidence before it in relation to firefighting work practices.

42. **Agency co-operation**: As Counsel Assisting recognizes[46], the Victorian agencies worked very well together, as did the Victorian and non-Victorian agencies. This matter is principally addressed in the oral evidence of the Fire Services Commissioner on Day 1 of the hearing.[47] Specific reference to the role the MFB often plays in incidents outside the metropolitan district was also made in the oral evidence of Costa Katsikis of the MFB.[48]

43. **FirefighterL:** When the State was advised that Firefighter L had provided a statement to the Board, it was unable to obtain a copy of the statement until it provided a form of written assurance that no adverse action would be taken against Firefighter L arising out of giving evidence to the Inquiry.

44. After providing the requested assurance, the State received a copy of Firefighter L's statement on 9 June 2014. It was anticipated that he would give evidence on 13 June 2014 but never did so. We understand that Mr Marshall of the UFU wrote to the Board in relation to Firefighter L's nonappearance in a letter dated 12 June 2014.

45. All this evidence suggests that Firefighter L had decided not to give evidence to the Board well before the email from the CEO of the MFB to staff at 6:57 am on 13 June 2014. In any case, the purpose of Mr Higgins' email was clear and explicit, and related only to possible approaches by the UFU to staff of the MFB for the unauthorised release of information about the organization.

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[45] The Board was provided with a copy of a finalised divisional version of this SOP (entitled Divisional Operating Procedure 10.01) as an attachment to an email from Peter Stewart to Justine Stansen, dated 27 May 2014 and sent at 6.40 pm. This document does not have a draft watermark and we understand that it was distributed in region 10 on 9 January 2014 and thus satisfied the requirement for it to be adopted as at 9 January 2014.

[46] Counsel Assisting closing Submissions, paragraph 1.2(7).

[47] Lapsley T98: 27-T99: 3.

[48] Katsikis, T527: 1-3.

THE IMPACT ON THE PUBLIC AND THE RESPONSE

46. **CO Response Protocol:** Counsel Assisting has criticised the Carbon Monoxide Response Protocol and the Department of Health (**DoH**) interpretation of CO data. In order to fully respond to these criticisms, and the assertion that these matters have not been fully explained to the Board, the State considers it necessary to provide a summary of the evidence provided to the Board to inform its assessment of these matters.

47. Individual spot readings of CO from hand held monitors operated by the CFA and Environment Protection Authority (**EPA**) personnel commenced from 13 February 2014. Readings obtained on 13 and 14 February did not include any measurements that caused any concern. This information was conveyed to the community in the Community Information Fact Sheet released on 14 February 2014 and discussed at the community meeting that evening.[49]

48. On the weekend of 15/16 February 2014, there was a material change in the intensity of the fire.[50] There were several spot readings of CO in the range of 15 ppm on 15 February, leading to the issuing of a "Watch and Act – Shelter in Place" alert by the Incident Controller. These spot readings were not considered to be a health concern and were similar to what might be expected standing on a busy city intersection or next to a gas stove.[51]

49. However, in Victoria, no community based protocol for outdoor CO exposure from an emergency incident existed for this type of fire prior to 15 February. It was recognised that a protocol was needed to guide decision making by the Incident Controller.[52]

50. Therefore, on the afternoon of 15 February 2014, DoH and EPA staff, with the involvement of CFA, MFB and Victoria Police, developed and agreed on a protocol including the decision-making matrix and CO triggers that were operational over the weekend of 15/16 February 2014 and subsequently formed the Carbon Monoxide Response Protocol.[53]

51. As stated on page 2 of the Carbon Monoxide Response Protocol, in developing the Protocol reference was made to the "Protective Action Decision Guide for Emergency Services during Outdoor Hazardous Atmospheres" which was published in 2011 and endorsed by the CFA, the MFB, Victorian and Australian governments and ChemCentre.[54] The Protective Action Decision Guide recommends that the Acute Exposure Guideline Levels (**AEGL**) should be used for short term community exposures to outdoor air chemical concentrations for a range of hazards.[55] The AEGLs are internationally used and accepted guidelines and are used by fire

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[49] Statement of Lester, paragraph 52 (exhibit 46). Lester T1212. Lester T1217.
[50] T1141.
[51] T1153.
[52] Statement of Lester, paragraph 55 (exhibit 46).
[53] Statement of Lester (exhibit 46). Statement of Merritt, paragraph 132 (exhibit 32). Statement of Torre, paragraph 40-43 (exhibit 38).
[54] Attachment 8 of Statement of Lester, paragraph 2 (exhibit 46). Paragraph 10.88 of the submission from the Victorian Government May 2014.
[55] Attachment 8 of Statement of Lester, paragraph 2 (exhibit 46). Paragraph 10.84 of the submission from the Victorian Government May 2014.

agencies and other government agencies in the US, Europe (e.g. Germany and the UK) and in Australia.[56]

52. The AEGL for CO is published by the US National Academy of Sciences 2010.[57] The AEGL represent threshold exposure limits (exposure levels below which adverse health effects are not likely to occur) for the general public and are applicable to emergency exposures.[58]

53. The AEGL has five thresholds for various time periods; the first is 27 ppm for 8 hours, the second 33 ppm for four hours, the third 83 ppm for one hour, 150 ppm for 30 minutes, and 420 ppm for 10 minutes.[59] These levels were set out in the Carbon Monoxide Response Protocol on the weekend of 15 and 16 February 2014.[60] An additional margin of safety was applied by lowering the one hour figure to 70 ppm.[61] No change was made to the levels from this time.

54. Subsequently, in the various comments in the advice given to the EPA from the two external parties on 24 and 25 February 2014 (one of which was an informal email), there was recognition that this was a difficult issue with risks and benefits in all actions. While there is discussion on the appropriateness of the standard used in the protocol, this discussion occurred well after 16 February. DoH is happy to convene a formal panel to review the protocol in the future.

55. The Carbon Monoxide Response Protocol was peer reviewed for DoH by Toxikos on 27 February 2014.[62] The peer review undertaken by Toxikos concluded that "for the acute emergency situation and current patterns of exposure in Morwell the proposed [Carbon Monoxide Response] Protocol is considered appropriate."[63]

56. The review by Toxikos included consideration of comments made by Ross Anderson and Fay Johnston who were engaged by EPA to review the Carbon Monoxide Response Protocol. The review by Toxikos noted that "ambient air quality guidelines and standards, such as the NEPM standards and WHO guidelines [Anderson and Johnston referenced the WHO guidelines in their comments] are developed to protect the most sensitive individuals in a population for a lifetime (assumed 70 years) exposure. They have a high level of conservatism built into them and are not appropriate for use in emergency situations to determine whether evacuation is necessary."[64]

57. The Carbon Monoxide Response Protocol was ground breaking in its development, pulling together the best available science and expert opinion, in an area where there was a distinct lack of readily available guidance for the circumstances produced

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[56] Attachment 9 of Statement of Lester, paragraph 2.2 (exhibit 46).
[57] Statement of Lester, attachment 9, paragraph 2.2 (exhibit 46). Statement of Lester, attachment 8, paragraph 2 (exhibit 46).
[58] Statement of Lester, attachment 9, paragraph 2.2 (exhibit 46). Statement of Lester, attachment 8, paragraph 2 (exhibit 46). Paragraph 10.88 of the submission from the Victorian Government May 2014.
[59] Paragraph 10.88 of the submission from the Victorian Government May 2014. Statement of Lester, attachment 8, figure 1 (exhibit 46).
[60] Statement of Lester, attachment 8 of paragraph 2 (exhibit 46).
[61] Paragraph 10.88 of the submission from the Victorian Government May 2014. Attachment 8 of Statement of Lester, paragraph 2 (exhibit 46).
[62] Statement of Lester, paragraph 57 (exhibit 46).
[63] Statement of Lester, attachment 9, paragraph 7 (exhibit 46).
[64] Statement of Lester, attachment 9, paragraph 6 (exhibit 46).

during this event, and has been independently validated as appropriate. It was based on the appropriate, well-researched, widely-adopted and formally approved (in Victoria) approach for selecting community exposure standards (the AEGLs), which were suitable for emergency events of this type.[65] The State does not agree that the DoH should have adopted the NEPM or the WHO standards, which are designed for longer-term ambient air quality and not for an acute health exposure. In particular, the 9 ppm referenced in the NEPM is not a health standard but the relevant excedence level for ambient air quality reporting.

58. **Occupational CO Standards:** The Carbon Monoxide Response Protocol is separate and distinct from protocols and guidelines applicable to ambient air quality or occupational health and safety of firefighters.

59. Occupational Health and Safety (**OHS**) thresholds recognise that firefighters are exposed to potentially very high levels of CO close to the source of the hazard (possibly in confined or poorly ventilated spaces) and potentially repeatedly in subsequent work shifts.[66] They have a higher work rate with faster breathing than the general community. In the community, levels will be expected to dissipate much more rapidly in the open air. This is because the plume varies in intensity and direction in the open area because of wind and atmospheric conditions.[67] Therefore, continuous high levels of exposure to CO are much less likely for affected communities subject to smoke plumes and the CO in them.[68]

60. From the start of the fire, fire services used an initial draft protocol called "Health Management Plan – Hazelwood Coal Mine Fire" (undated) until it was replaced by an approved "Health Management and Decontamination Plan – Latrobe Valley Coal Mines Fires" on 14 February.[69]

61. The thresholds for firefighters in these documents are quite similar, in at least some regards, to those in the Carbon Monoxide Response Protocol. For example, in the draft plan, they were permitted to work for 8 hours at up to 30 ppm (Time Weighted Average (TWA), before they were to be removed from the fire. This is based on the Safework Australia National Occupational Exposure Standard. This is almost the same as the figure of 27 ppm adopted in the Carbon Monoxide Response Protocol. [70]

62. In the approved plan, firefighters were able to work normally until CO measurements exceeded 50 ppm, when they had to withdraw or use breathing apparatus. There was no reference to an 8 hour 30 ppm threshold.[71]

63. During the period of the fire, the CHO had no involvement in any decisions about safety thresholds for the firefighters in the mine, as this is an OHS issue for fire services. The key difference between DoH's developed protocol for the community

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[65] Statement of Lester, attachment 9, paragraph 2.2.1 (exhibit 46).
[66] T1151-3. T1218-15.
[67] T1218: 17-21. T1247: 29-31. T1248: 1-3. Attachment 8 of Statement of Lester, paragraphs 1 and 3 (exhibit 46).
[68] Statement of Lester, paragraph 27. (exhibit 46). Lester T1147.
[69] Supplementary Statement of Lapsley, paragraph 19 (exhibit 26)
[70] FSC.0011.001.0033. Statement of Lester, attachment 8 (exhibit 46).
[71] Supplementary Statement of Lapsley, attachment (refer paragraph 21) (exhibit 26). FSC.0011.001.0017.

and that used for the firefighters is that the latter are in an environment much more exposed to the hazard.[72]

64. **CO Data**: In order to assess the risk to public health from CO exposure, rolling averages measured over a given time period (ideally a minimum of one hour) are required.[73] The AEGL standard requires continuous exposure readings because it is continuous exposure to CO that is potentially dangerous.[74] The human body recovers from high levels of CO exposure within hours if the levels reduce. CO does not accumulate in the body; it is completely excreted after each exposure if sufficient time allows—the half-life of CO in blood is 2 to 5 hours.[75]

65. On 16 February 2014, in an email from Dr Paul Torre (EPA) to Vikki Lynch (DoH), DoH was provided with data about CO monitoring in Morwell.[76]

66. The email states "Continuous CO air monitoring was undertaken at five locations in the Morwell South residential area covering over approximately 4 kilometres on the 16/02/14. During on 00:30 and 08:30 concentrations averaged ranged from 25 to 45 ppm. The results of short term (5 minute) CO air monitoring during 13:30-18:30

Sampling location	ppm
Police station	7-35
Morwell Bowling club	25-57
Keegan Street	24
Kennedy Street	26
Travers Street	30
McKean Street	44
Kindergarten-Maryvale Road	20-44
Grand View	34

CO measurements in the Morwell Bowling Club and directly outside recorded 28 ppm".

67. The figure of 45 ppm was later clarified as a peak and not an average, in conversations between DoH and EPA.[77]

68. Based on data provided by the EPA, over a 4 hour period the average CO readings were 30-35 ppm across five monitoring stations. As these readings fluctuated above and below the threshold, which necessarily meant that some readings were below the

[72] T1151-3. T1218-15.
[73] T1148.
[74] Statement of Lester, paragraph 56 (exhibit 46). Attachment 8 of Statement of Lester, paragraph 3 (exhibit 46).
[75] Statement of Lester, attachment 9, paragraph 2.1 (exhibit 46).
[76] Email provided to the Board by VGSO on 3 June 2014 as undertaken by Torre in Evidence at T983.
[77] T1220: 11.

threshold, the protocol was not triggered. A peak of 45 ppm was reported, which was well below the threshold of 420 ppm, meaning the protocol was not triggered.

69. Further CO monitoring data was provided in the same email (ie, the table above). The results were provided for 8 sites over a five hour period. The results were reported as five minute values. They were compared against the AEGL standard for ten minutes (ie 420 ppm) with a range of readings all including values lower than 27ppm (the threshold for action over an 8 hours period) Accordingly, the protocol was not triggered.

70. Five minute averages are not necessarily indicative of a rolling average that would be required for direct assessment against AEGL standards. Based on data and assessments from EPA and DoH experts, the CHO determined that no action was required other than a high level smoke advisory. Ms Lynch (DoH) rang Dr Torre (EPA) and asked him to talk through the data provided by the EPA to inform the circumstances and situation. This is clearly documented in Ms Lynch's email confirming this discussion and understanding that night. If the "average" is close to a threshold, then invariably those levels have not triggered the threshold, because there are readings below the average in the relevant time period that invalidate the continuous exposure that is the potential problem. In an outside environment, the wind may blow variably and the CO levels rise and fall with that variability.[78] Research has shown that very brief exposure to highly elevated CO concentrations during moderate overall CO exposure does not necessarily result in harmful thresholds being exceeded (Reisen et al, Bushfire CRC 2008).

71. The Chief Health Officer (**CHO**) considers that her assessments and the advice she gave in relation to CO were proportionate and appropriate in light of the identified risk to public health, based on the information available to her at the time.[79] These assessments were based not only on the indicative data available to her, but also on the scientific understanding that the likely risk to the public of CO exposure was low.[80]

72. The assessments of CO risks on 16 February 2014 and the recommendations for action were appropriate and based on the best available data at the time.[81] While the levels of CO were elevated and of concern, and needed to be monitored, they were not "dangerously high levels". The State therefore rejects the assertion by Counsel Assisting that "this inaction was dangerous" on that evening. This is corroborated by the data available from health presentations in Morwell that has clearly shown that there were no increase in presentations to Latrobe Regional Hospital in the relevant periods of 15, 16 and 17 February 2014.[82]

73. On 17 February 2014, DoH was advised that levels of CO in Morwell had dropped overnight. In order to obtain the best possible monitoring data to inform its public health assessments, from 17 February 2014 DoH and the EPA continued discussions

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[78] T1218: 17-21. T1247: 29-31. T1248: 1-3. Statement of Lester, attachment 8, paragraph 1 and 3 (exhibit 46).
[79] Statement of Lester, paragraph 59 (exhibit 46).
[80] Statement of Lester, paragraph 50 and 51 (exhibit 46).
[81] T1218: 17-21. T1218: 29-31. T1219: 1-2.
[82] Statement of Lester, attachment 16 (exhibit 46).

about what information was required and in what format in order to inform public health advice.[83]

74. Firefighter L, in his submission, correctly documented that a TWA of 30 ppm (from the draft fire services plan) was a trigger point. He omitted to state that this was an 8 hour (TWA) figure. He then correctly states that the Carbon Monoxide Response Protocol has a 1 hour threshold of 70 ppm. However, Firefighter L incorrectly compared the 8 hour (TWA) 30 ppm threshold (in the draft fire services plan) to the 1 hour 70 ppm (in the Carbon Monoxide Response Protocol) and incorrectly concluded that "the Health department were allowing the public to be exposed to those levels". The appropriate comparison in the Carbon Monoxide Response Protocol is the 27 ppm threshold for 8 hours.

75. **PM2.5 data:** The objective of the PM2.5 Protocol is to prevent sensitive groups in the community being exposed to high levels of fine particles in the air for more than three consecutive days.[84] The public health effects of exposure to PM2.5 depend on not only the level of exposure, but also the period of exposure and the sensitivities of particular people.[85] The body recovers quickly in periods where the level of exposure is reduced.[86] However, the longer the period of exposure, the more likely that a health problem such as exacerbation of a heart or lung condition could occur.[87]

76. Data obtained from 13 to 22 February 2014 for southern Morwell was indicative data for which the accuracy was undetermined and required correlation.[88] The EPA provided directly measured PM2.5 data to DoH for the eastern part of Morwell and indicative PM2.5 data and expert interpretation for the southern part of Morwell on 16 February 2014.[89] As Dr Torre explained in his evidence, the indicative data for those dates has subsequently been reanalysed and correlations established to estimate the levels on 16 February 2014.[90]

77. The CHO issued advice throughout the incident which was commensurate to the public health risk, and based on the information available.[91]

78. **Temporary relocation advice — before 28 February 2014:** The precautionary principle in section 6 of the *Public Health and Wellbeing Act* 2009 provides that "if a public health risk poses a serious threat, lack of full scientific certainty should not be used as a reason for postponing measures to prevent or control the public health risk." This nonetheless requires that a serious threat be identified and established. The CHO also has regard to the other principles set out in Part 2 of the *Public Health and Wellbeing Act* 2009. Of particular relevance in this instance are the principles of evidence based decision-making and proportionality, which are outlined in sections 5 and 9 of that Act.

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[83] Statement of Lester, paragraph 58 (exhibit 46).
[84] T1172: 23-27.
[85] See further Statement of Lester, paragraph 32 (exhibit 46).
[86] T1145: 4-6.
[87] T1137-8. T1145. T1177.
[88] Torre, T982.
[89] Torre, T1081. Se also, second Statement of Torre, paragraphs 32 and 52 (exhibit 38) and Statement of Merritt, paragraph 120 (exhibit 32).
[90] Torre, T1081.
[91] Statement of Lester, paragraph 68 (exhibit 46). Lester T1176.

79. It was appropriate for public health assessments to be made on a day-to-day basis, based on the air quality data and forecasts available at the time. Any estimate from fire services at the beginning of the fire that it may burn for a certain period was not an indication or forecast of what the air quality would be for that period.[92] The air quality data summaries demonstrate that air quality fluctuated significantly during the period of the fire.[93]

80. There was uncertainty about the duration and intensity of the fire and inherent variability in wind direction and smoke plume intensity and drift.[94] It is also noted that the Fire Services Commissioner gave evidence that there were a number of different predictions during the early stages of the fire about its anticipated duration.[95]

81. The CHO provided advice consistently throughout the incident that vulnerable groups should take breaks away from smoky conditions. The temporary relocation advice was not contradictory, but rather the next step in escalating the public health advice over the duration of the incident.[96]

82. An initial evacuation order for any group, even for vulnerable groups, was not appropriate and is not a proportionate response because the risks of evacuation on people's health are also significant. These include dislocation from familiar surroundings and medical care and the possibility of substandard accommodation. In unfamiliar surroundings, vulnerable persons may experience more falls, may not have access to their normal family and support mechanisms or their normal medical care and may experience high levels of anxiety because of these factors.[97] If recommendations to evacuate/temporarily relocate are given too early, this relocation may last for a significant period of time. Fay Johnston from CAR, in her advice on 27 February, states:

> "Relocating hundreds of people, possibly for months, is a major decision leading to enormous costs and disruption to the lives of those who leave their homes"[98]

83. This would also have a significant impact on the economy of the town at a very difficult time.

84. Advice from the NSW Health Department at a teleconference on 27 February to the PM2.5 protocol and its recommendation for relocation (subsequently confirmed in writing), was:

> "The advice in the proposed protocol is quite strong. The individual risk from PM is small and unlikely to justify a government recommendation that

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[92] T1177: 4-8. T1176: 25-28. Statement of Lester, attachment 14 (exhibit 46).
[93] T1146.
[94] T1142.
[95] T62:1.
[96] Statement of Lester, paragraph 71 (exhibit 46)
[97] T1176. T1203..
[98] Statement of Lester, paragraph 86 (exhibit 46).

vulnerable groups "should" relocate. Relocation is potentially costly and poses its own health risks." [99]

85. Without knowing the duration of any potential evacuation, it is safer for people to initially remain in the security and familiarity of their homes but to minimise their exposure to smoke.[100]

86. The advice given by the CHO was that persons in identified vulnerable groups should consider temporary relocation.[101] While this did not compel those persons in any way or trigger any "evacuation" procedures by emergency services,[102] it was anticipated that those affected in the community would wish or intend to follow the advice, given the weight of authority that is given to advice issued by the CHO. The relevant considerations, as outlined above, were assessed accordingly.

87. **Temporary relocation advice — 28 February 2014**: On 28 February 2014, the CHO recommended temporary relocation advice for vulnerable groups living or working in the southern part of Morwell.[103] This escalated previous advice to take regular breaks away from smoke, was precautionary, and was based on the following considerations:

87.1 by that stage, the fire had been going for nearly three weeks so the cumulative exposure was increasing;

87.2 while the literature clearly indicates that short-term exposure does not lead to significant long-term health impacts, the duration was now longer than the usual short term exposure;

87.3 there had been two days (26 and 27 February) of increasing readings and it was predicted that they may continue for several more days; and

87.4 the Fire Services Commissioner had revised his estimate of when the fire might be under control and predicted it might take a further 2 weeks.[104]

88. This decision was not in any way 'arbitrary'. It was made following extensive consultation with other jurisdictions and leading health experts.[105]

89. This was decided at the end of 27 February 2014 and announced at around noon on 28 February 2014, allowing time for quite a number of supporting activities to be put into place.[106] For instance, Department of Human Services (**DHS**) had to prepare the relocation advice and the accompanying grants process and to organise for their offices to be open all the following weekend.[107]

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[99] Statement of Lester, attachment 13 (exhibit 46). Lester T1178.
[100] T1202-1203.
[101] Statement of Lester, paragraph 87 (exhibit 46).
[102] T1179.
[103] Statement of Lester, paragraph 88 (exhibit 46).
[104] Statement of Lester, paragraph 84 (exhibit 46). Lester T1176-6.
[105] Statement of Lester, paragraph 86 (exhibit 46).
[106] Hazelwood Coal Mine Fire Inquiry: Submission from the Victorian Government (May 2014) paragraph 11.63
[107] Hazelwood Coal Mine Fire Inquiry: Submission from the Victorian Government (May 2014) paragraph 11.73 – 11.76.

90. This advice stayed in place until 17 March 2014 after the fire was declared safe and there was no more smoke threat from the mine.[108]

91. The risks of particulate matter were appropriately managed and the temporary relocation advice of 28 February 2014 was timely. The arguments provided for that advice to be given on 16 February 2014 (or even at the start of the fire, as was argued earlier) do not use the evidence that was available day-to-day on the varying conditions that were being experienced, that there were highly variable amounts of smoke being blown across Morwell by changing weather conditions, that there were significant periods when Morwell was not subjected to any serious levels of smoke, and that the health data that was being collected and collated daily by DoH consistently showed no evidence of any serious health impacts that could be attributed to the smoke.

92. **Public information about peer reviews**: It has been asserted that the benefits of EPA's peer reviews would have been enhanced had they been shared with the community,[109] and that the benefits of the external expertise used in developing the PM2.5 and CO protocols would have been enhanced had it been obtained at an earlier stage and shared with the community.[110] There is no evidence before the Board to support these assertions.

93. Similarly, it has been asserted that benefits of the Community Health Assessment Centre would have been enhanced had local medical practitioners been involved in the establishment and operation of the Centre.[111] There is no evidence before the Board to support this assertion, nor is there any evidence as whether local medical practitioners were available and willing to be involved in this way. Further, it should be noted that local general practitioners provided services to the community through their private clinics throughout the incident, and community members were referred to their local practitioner for advice and treatment as required.

94. **Relocation of Commercial Road Primary School:** Regarding Counsel Assisting's suggestion that the Commercial Road Primary School should have been relocated more quickly,[112] there is no evidence to suggest that it should have been closed during the first week of the fire. Early in the second week, when conditions had deteriorated, Department of Education and Early Childhood Development (**DEECD**) sought the advice of the CHO, and it was agreed that it was consistent with her advice to take regular breaks out of the smoke, to have the school relocated. Decision making regarding government school closures was consistent and based upon advice from DoH (which made a distinction between conditions north and south of Commercial Road).[113]

95. It should be noted that Latrobe City Council's action to close Maryvale Crescent Early Learning Centre on 10 February 2014[114] was consequential upon the existing

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[108] Statement of Lester, paragraph 89 (exhibit 46).
[109] Counsel Assisting closing Submissions, paragraph 2.1(2).
[110] Counsel Assisting closing Submissions, paragraph 2.1(4).
[111] Counsel Assisting closing Submissions, paragraph 2.1(3).
[112] T2381.16.
[113] T912-913.
[114] T2368.25.

fires in the area that created logistical problems in terms of access to the centre, rather than the mine fire.[115]

96. **Attribution of credit and responsibility**: During the Hazelwood Coal Mine fire many agencies made contributions to products and activities that were ultimately organised and presented by other agencies, from media releases and community newsletters to public meetings and doorknocks. It was a co-ordinated and collaborative effort. It would be unfortunate if this Inquiry were to make recommendations the effect of which would be to encourage different agencies to feel that they need to compete with each other to ensure that they are publicly visible or, conversely, which would inhibit them from participating in joint activities where their own branding might not be evident.

97. Similarly, there are risks in assigning credit or blame to particular agencies when much of their work might be carried out by other agencies: for example, DoH works through its funded agencies, which included Ambulance Victoria, local hospitals and health services and local aged care service providers,[116] and DHS for some activities engaged in by the Red Cross.

98. **Communications and the communication experts:**

98.1 The experts focussed almost exclusively on the publicly available statistical demographics, not the characteristics that were less easily knowable and measured.

98.2 The witnesses agreed that there was distrust towards government in Morwell that predated the fire[117] and the Board should bear in mind that the level of distrust may have been exceptional.

98.3 Professor Macnamara suggests in his report that in a press release relating to odour reported in Morwell, EPA sought to blame businesses rather than the coal mine fire.[118] This issue was more than a month after the fire was declared safe and investigations at that stage indicated it was likely (but not yet proven) to be related to agricultural application of fertiliser. The State suggested that this interpretation by Professor Macnamara is baseless and in itself misleading.

98.4 Professor Macnamara also asserts that authorities, and EPA by specific example, "downplayed the risks from the mine fire" through their communication.[119] The example used to support this allegation is a series of tweets from 12 and 13 February 2014. The information provided in these tweets, is inconsistent with testimony provided by EPA witnesses, particularly with respect to the expected, and measured, CO levels on those days. The State submits that this assertion of Professor Macnamara is subjective and without basis.

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[115] Statement of Mitchell, paragraph 18 (exhibit 55). T2368.25.
[116] T1063. T1064. T1099.
[117] T1292.28. T1316.28. T1415-16.
[118] Macnamara, "A review of Public Communication, Hazelwood Coal Mine Fire", page 34.
[119] Macnamara, "A review of Public Communication, Hazelwood Coal Mine Fire", page 35.

99. **Emergency warnings and emergency communications**: The comments of the communications experts and the questions of Counsel in relation to two media releases of 28 February raise issues of importance. Counsel Assisting also make a number of critical comments about smoke and health alerts and advisories issued throughout the fire.[120] The EPA media release was a health advisory. The EPA issues these under a protocol between it and the DoH. The DoH sets the text, and the EPA issues the advisory whenever there is a low level or high level smoke alert. They are issued automatically—they are like an alarm that sounds automatically when certain pre-determined limits are exceeded.

100. This procedure is followed because the CHO is responsible for public health, but EPA does the measuring and is able to issue an advisory without reference to the CHO as soon as a particular level of particulates is reached.

101. The advisories were issued every day because the level of smoke changed every day. They were repetitive in the same way that an audible alarm triggered in particular circumstances always sounds at the same pitch and for the same duration. That is what it is programmed to do.

102. It could be argued that:

- the advisories should be issued in the name of the CHO;
- the advisories should be individually written or modified each time to make them more interesting or news-worthy, although that would come at the cost of having them delayed and potentially (by implication) communicating that something has changed when nothing has;
- they should not be issued at all if a risk persists for more than a few days (meaning that emergency warnings about recurring health risks should not be repeated if there is a risk that those receiving them might find them repetitive or uninteresting)

103. It is true, however, that the protocol for smoke advisories in relation to bushfires may not work as well when used in long-term HazMat situations.

104. **Health Communications:** The weekend of 8/9 February 2014 was predicted to be a period of both high heat conditions and high fire danger for the state with fire already present in some areas including Gippsland. Health messaging was already available and being promoted to stakeholders and the community with specific communication materials relating to heatwave and bushfire smoke. The smoke information was part of a suite of tested and well utilised resources also developed since 2009 and translated into 14 community languages.

105. When the fire occurred on 9 February 2014, it was initially a bushfire event. The main smoke component of public health concern is fine particles. This is the case whether the smoke is from a large bushfire or an open cut brown coal mine fire. However, as the bushfire de-escalated and the specific and unique nature of the Hazelwood mine fire became evident, the communication strategy was adapted.

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[120] Counsel Assisting closing Submission, paragraph 2.2(7)-(9).

From 16 February 2014, tailored resources were produced with messaging specific to this incident and the issues it raised.

106. The submissions of others to the Inquiry have predominantly, and inappropriately, concentrated on the general EPA smoke warnings designed for the region. EPA smoke warnings are regional in nature – bush fires lead to smoke, which usually affects large areas. These general warnings were designed for, and applicable to, the people in the Latrobe Valley. More specific advice for the people of Morwell occurred via the many channels described below.

107. From the outset, specific warning messages were issued to sensitive members of the Morwell community about avoidance of risk and self-protection. These messages were disseminated directly from the CHO and through numerous stakeholders, including healthcare professionals and other organisations, involved in the incident.

108. Progressive escalation of the DoH's response occurred in line with the progression of the fire. The information provided also sought to address the primary areas of concern and the necessary steps to reduce or mitigate the impacts. These were the short and long term impacts of smoke and the content of the smoke.

109. From the outset of the fire, the risk of smoke, particularly on vulnerable groups, was consistently and accurately emphasised through multiple mediums including media interviews by the CHO.

110. In addition, there were printed fact sheets available at several local locations, paid advertising, face to face advice provided at the Community Health Assessment Centre and the Respite Centre, information through Latrobe City Council, Ambulance Victoria and CFA newsletters and information displayed on the DoH website. Information was also provided through local health representatives who attended community meetings.

111. Regular, common messages were provided through Facebook and Twitter, directing responses to appropriate fact sheets, and by the Community Health Assessment Centre, Nurse-on-Call or other medical assistance, as required. This approach ensured general queries could be answered quickly and more serious medical concerns also addressed by suitably qualified health professionals.

112. In addition to the messaging disseminated directly by the DoH, every opportunity was utilised to support stakeholders with accurate and timely messaging. This meant that not every message carried 'Health' branding but every effort was made, with the resources available, to reach as many residents as possible, through as many stakeholders and conduits as were available.

113. In addition to new resources developed for this incident, existing mechanisms were also utilised, particularly when reaching health professionals and other stakeholders with whom DoH already has established relationships. For example, CHO Alerts and Advisories have been utilised for many years and are instantly recognised by the sector. These Alerts and Advisories have previously been valued by healthcare professionals and are considered a critical source of consistent and accurate information.

114. **Communications issued by fire services**: As Counsel Assisting recognises, the warnings and other communications issued by fire services were largely effective. As the incident continued it was noted that the messages were not always getting through to the community. There were a number of matters that were specific to the Morwell community which made the normal communications tools less effective. These were identified relatively swiftly and, to address this, novel methods were utilised to engage with the community.

115. The principal evidence led in support of this proposition is the evidence of the Fire Services Commissioner, in particular, his statement of 20 May 2014 which discussed the iteration of the communications strategy and tools used to implement it.[121] The Fire Services Commissioner also gave oral evidence on this but in less detail.

116. **Cleaning of schools and learning centres**[122]: Only DEECD arranged for the comprehensive cleaning of schools in Morwell. In addition to the Commercial Road Primary School, cleaning was provided to several learning centres, two Catholic schools (Sacred Heart Primary School being one) and Berry Street School (a non-government school).

ISSUES OF REGULATION

117. **The transfer of staff and corporate knowledge to Victorian Workcover Authority (VWA):** The statements in the closing submission of Counsel Assisting relating to the recommendations of the Pope report[123] and the transfer of staff and corporate knowledge from Department of Primary Industries (**DPI**) and VWA are not a full representation of the facts, and the scope of the statements are not supported by the evidence available to the Board.

118. There are three mechanisms by which DPI handed knowledge and expertise over to VWA:

118.1 monthly Steering Committee meetings;

118.2 staff transfer; and

118.3 file transfer.

119. The quality of the handover process was affirmed in an audit conducted by Deloitte.

120. Steering Committee meetings were held periodically from late 2006 through to early 2008. They were attended by senior officers from DPI and VWA. The audit found that "OH&S and mining industry knowledge was transferred from DPI to VWA via monthly Steering Committee meetings."[124]

121. In relation to the transfer of staff, after conducting a staff review, VWA's board of management concluded that three mining engineers and two inspectors could be recruited to service mines and three inspectors to service quarries. Other additional responsibilities would be absorbed within existing staffing at VWA. No DPI staff

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[121] Statement of Lapsley,, at 146-172 and 229 (exhibit 1).
[122] T2369.21.
[123] Counsel Assisting closing Submissions dated 17 June 2014 at 4.1(72).
[124] Statement of White, paragraph 68 and 73 and exhibit KAW 18 (exhibit 59).

were forced to transfer to VWA and VWA conducted an open recruitment process for all new positions.

122. In relation to the transfer of files, 600-700 files were assessed for transfer from DPI to VWA. In relation to the Hazelwood coal mine, DPI retained the hard copy registered site files and audit program files (including results) of which VWA was to be given copies if it requested them. VWA was provided with registered files for licensing of explosives and high consequence dangerous goods, and electronic files of the accident database, injured worker details and various other documents.

123. **Monitoring the implementation of the recommendations of the 2008 GHD report to GDF Suez**: VWA would only be expected to have monitored the implementation of the 2008 GHD report if it dealt with major mining hazards.[125] The State is not aware of any evidence before the Board to the effect that the kind of fire in the worked out batters that occurred in 2008 or 2014 has "potential to cause an incident that would cause, or pose a significant risk of causing more than one death",[126] the test relied on by Counsel Assisting,[127] and Professor Cliff appeared to endorse by implication the view that such a fire is not a major mining hazard.[128] It was therefore appropriate for the VWA to leave responsibility for the implementation of the 2008 GHD report with the entity responsible for implementing it, GDF Suez and, instead, focus its regulatory resources on ensuring that GDF Suez had appropriate systems for dealing with major mining hazards.

124. **Compliance with regulation 5.3.23:** The criticism of VWA by Counsel Assisting for the way in which compliance with regulation 5.3.23 was examined or overseen[129] should be read in conjunction with the evidence of Professor Cliff's testimony that GDF Suez's safety assessment did comply with the requirements of the regulation.[130]

125. **Compliance with 1994 Fire Service Policy**: There is no evidence before the Board to support the assertion of GDF Suez that it is compliant with the 1994 Fire Service Policy regarding fire protection on the northern batters of the mine.

126. **Section 23 of the OHS Act:** Mr Neist was asked to give oral evidence about the correct legal interpretation of s 23 of the OHS Act. Mr Neist had not given evidence on this issue in his statement; nor was the questioning by Counsel Assisting based on anything foreshadowed in the Board's request for a statement from Mr Neist. That being the case, Mr Neist's evidence about the correct interpretation of s 23 was given without Mr Neist having had the benefit of legal advice on the issue. Mr Neist's evidence on this issue should not therefore be taken as reflecting VWA's considered position.

127. No issue is taken in the context of this Inquiry with the view put forward by Counsel Assisting that a fire in the worked out batters may arise from the conduct of the undertaking of the mine operator, within the meaning of s 23 of the *Occupational*

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[125] Due to the risk-based model of occupational health and safety regulation under the Occupational Health and Safety Act 2004 (Vic) and Occupational Health and Safety Regulations 2007 (Vic).
[126] The term "major mining hazard" is defined in r 1.1.5 of the Occupational Health and Safety Regulations 2007 (Vic).
[127] Counsel Assisting closing Submissions dated 17 June 2014 at 4.1(29).
[128] T2091.5-7.
[129] Counsel Assisting closing Submissions, page 37 at 4.1(31) and page 45 at 4.1(72)(d).
[130] T 2090.26-2091.4; and CA 4.1.32.

Health and Safety Act 2004.[131] This may lead to a conclusion that, to the extent that there may be a "regulatory gap", it may be the narrower one identified by Counsel Assisting.[132]

128. The devotion of VWA resources to risks other than the risk of fire in the worked out batters of the mine is justified by the risk-based approach explained by Mr Neist in his evidence.[133]

129. **Scope of VWA investigation:** There is no evidence to support the conclusion of Counsel Assisting that the on-going investigation into the fire being conducted by VWA concerns a possible contravention of section 23 of the OHS Act.[134]

130. **Rehabilitation and fire mitigation**: The purposes of rehabilitation set out in sections 78, 79 and 81(1) of the *Mineral Resources (Sustainable Development) Act* 1990 (Vic) do not include the mitigation of the risk of fire. The concept of rehabilitation does not embrace the concept of "interim measures", including interim rehabilitation in order to mitigate the risk of fires. The State does not agree with Environment Victoria that a major emphasis on rehabilitation should be made in the Board's findings and recommendations, but does agree with Counsel Assisting that the licensee should undertake a thorough risk assessment of the likelihood and consequences of fires in the mine and determine the most effective approach to fire protection. Whether this would result in a proposal to amend the scope, nature or pace of progressive rehabilitation in the mine would depend upon the result of the risk assessment.

131. The State also considers that a figure purporting to represent the degree or extent of rehabilitation, such as 14%,[135] may be misleading,[136] because a 'percentage' based on the entire area covered by the mining licence does not account for the fact that not all of that area will be disturbed by mining related activities.

132. Under the end-of-life rehabilitation plans, the lowest batters will only be exposed for around six years while water fills to that level.[137]

133. **Clarity of timing of mine sequencing and associated rehabilitation**[138]: There are five blocks of mining work specified in the work plan. The timing for progressive rehabilitation in the mine is tied to the completion of four of five blocks. Figures 6.1 to 6.4 in the 2009 work plan variation state that progressive rehabilitation is to be completed at the end of each of the four blocks specified.[139]

134. GDF Suez interpretation of the timetable is not justifiable, given the information set out in the work plan. The State rejects the interpretation of the timetable advanced by GDF Suez, and its claim that the timetable is a matter of interpretation.

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[131] Counsel Assisting closing submissions at 4.1(16) to 4.1(23).
[132] Counsel Assisting closing submissions at 4.1(26).
[133] Statement of Neist, paragraphs 10 and 28 (exhibit 70).
[134] Counsel Assisting closing Submissions dated 17 June 2014 at 4.1(18). Statement of Watson, at paragraph 8 (exhibit 65).
[135] T1662-63.
[136] T1678-79.
[137] T1686-1687.
[138] GDF Suez final submission, Paragraph 296.
[139] Statement of Faithful, paragraph 40.

135. **Rehabilitation bond**: The methodology associated with the rehabilitation bond is currently being reviewed. This may result in an increase in the level of bond.

136. **Approach to fire risk assessment**: The assessment of fire risk reduction should be conducted by GDF Suez as the duty holder, rather than jointly with the regulator(s) as proposed by GDF Suez. While GDF Suez is welcome to consult with the relevant agencies in conducting its risk assessment, the assessment is solely the responsibility of the duty holder. It is regrettable that the approach of GDF Suez appears to focus only on meeting explicit legal obligations. GDF Suez fails to recognise that the list set out in the second State submission[140] is not definitive so as to allow GDF Suez, as the licensee, the flexibility to identify risks and then to devise a solution that effectively manages mine hazards in a manner that is consistent with its operational requirements.

THE FUTURE

137. **Emergency air quality monitoring:** Counsel Assisting made a number of comments about EPA's role.[141] As noted in the State's second submission, the EPA is actively investigating the nature of its involvement in environmental monitoring in future emergencies and what equipment would be needed to support that involvement. Whether or not the EPA should be equipped in the future to undertake air quality monitoring rapidly in any location, it should not be concluded that at the time of the Hazelwood Coal Mine Fire EPA failed to discharge its responsibilities as a support agency. It was an unprecedented requirement of the EPA as a support agency to provide rapid deployment monitoring equipment.[142]

138. For any future inventory, it should also be recognised that it is unrealistic and unfeasible to maintain a complete inventory for any possible air quality scenario to respond within 24 hours. The evidence of Ms Claire Richardson is that EPA is equipped to carry out ambient air monitoring in line with its regulatory requirements. It is not usual for regulators to be prepared for rapid deployment of air monitoring equipment. The provision of 24 hour capability is more consistent with that of an industry consultant, not a regulator or environmental agency. Whilst it is reasonable to maintain a range of equipment for more common or frequent events, it is also entirely appropriate to continue the well established practice of utilising existing equipment from other agencies monitoring, as well as sourcing from external sources including interstate. This avoids unnecessary duplication of inventory, and provides the most expedient solution during emergencies.

139. **Air quality monitoring generally:** As part of a pre-planned equipment upgrade prior to the mine fire, EPA will be monitoring PM2.5 at all its fixed automatic air quality monitoring locations by the end of July 2014. Also prior to the incident, the upgrade of the Traralgon station had been scheduled for the week of the fire. Traralgon now monitors for PM2.5.

140. **Air quality monitoring in the south of Morwell:** The State's second submission notes that the State will have an automatic air quality monitoring station in the south of Morwell for the next 12 months, as a full year needs to be assessed. Standard

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[140] Second State Submission at 9.18
[141] Counsel Assisting closing Submissions, paragraph 2.2(1).
[142] Statement of Merritt, paragraph 14, 15, 21, 24 (exhibit 32). Merritt T797 and T837.

practice for long term monitoring is to carry out a 12 month cycle to provide a dataset that takes in seasonal variation, such as was provided in evidence in relation to the Morwell East decommissioning. There is no scientific basis for commencing from the outset a 5 year ambient monitoring program, although the standard annual review of data may result in such a station remaining in place for such a period. The long term location of any such station would also be the subject of scientific assessment and may or may not result in a station in that specific location in Morwell. EPA has also committed to a continued air sampling program (not continuous ambient monitoring) which is the appropriate methodology, in the south of Morwell for VOCs and PAHs which need averaged concentrations over 12 months to enable assessment against the relevant guidelines.

141. **National standards for PM2.5:** A national standard would apply to an annualized long-term measurement that is not applicable for acute impacts. Victoria supports and is committed to setting air quality standards at a national level. Victoria could not set its own compliance standard for PM2.5 ahead of the resolution of that issue at a National level. In Victoria, ambient air quality standards are established through the SEPPs which are a regulatory instrument and must follow the legislative process and timeframes including a Regulatory Impact Statement. A unilateral Victorian PM2.5 standard would potentially have unintended adverse impacts. The foundation of the NEPM is "equivalent protection of air quality across Australia". If Victoria had a different standard to other States it potentially skews standards if they are not universal across the States with industry potentially attracted to areas with lower standards.

142. There has been an announcement by the Commonwealth that the NEPM standard is to be amended to incorporate a regulatory requirement for compliance for a PM2.5 standard. The current advisory standard applies an annualised long-term standard that is not applicable for short term, acute effects.

143. **The length of the health study**: Counsel Assisting recommends that the long term health study should continue for at least 20 years.[143] That recommendation is consistent with the evidence of the CHO to the Inquiry. The CHO made it clear that the intention was that the health study continue for longer than 10 years[144] and that her expectation was that it would do so.[145] The reasons for having an initial contract were related to government procurement policy[146] and in particular allowing the decision to extend the contract to depend on performance and the judgment of the people at that future time.[147] It therefore misrepresents the evidence for it to be suggested that the DoH is not already committed to a health study of at least 20 years.[148]

144. **Acceleration of coming into operation of section 40 as amended of the MR(SD)A reform:** Counsel Assisting suggests that the commencement date for the amended section 40 of the *Mineral Resources (Sustainable Development) Act* 1990

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[143] Counsel Assisting closing Submissions, paragraph 2.3(6).
[144] T1193.10-11.
[145] T1191.21.
[146] T1191-1193.
[147] T1192.13-14.
[148] T2385.17.

(**MR(SD)A**) should be brought forward.[149] The Board should note that before the amended section 40 comes into force it will be necessary to amend the regulations in order to ensure that the regulations are consistent with and complement the amended provisions of the MR(SD)A.

145. Amending the regulations would most likely require the preparation of a regulatory impact statement, a process that may take 12 to 18 months to complete. In addition, further consequential amendments to the legislation might be needed if fire risk control measures were to become requirements in work plans.

146. In the meantime, industry - and, especially, licensees of all coal mines in Victoria - should be encouraged to prepare for upcoming intended statutory and regulatory changes.

147. **Inclusion of private operators in co-ordination of public communications and on Emergency Management Joint Public Information Committee:** The State supports private operators being included in these ways whenever it is appropriate to do so,[150] but, as in this case,[151] the decision to include them needs to take into account all the relevant considerations, including whether their inclusion will inhibit or compromise how government agencies properly discharge their responsibilities.

148. **Recommendation concerning occupational air quality standards:** Regarding the recommendation by Counsel Assisting concerning VWA developing and publishing information for employers about occupational air quality standards,[152] the Board should be aware that the Hazardous Substances Information System will be phased out by Safe Work Australia and no longer be updated after end 2016. The key document instead will be the Workplace Exposure Standard for Airborne Contaminants.

The State trusts that this response assists the Board in finalising its inquiry and delivering its report, and would welcome this letter being published on the Board's website.

Yours sincerely

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[149] Counsel Assisting closing Submissions, paragraph 4.1(80) and (81).
[150] Counsel Assisting closing Submissions, paragraph 2.3(10).
[151] T1422.
[152] Counsel Assisting closing Submission, paragraph 2.3(10).