



IN THE CORONERS COURT  
OF VICTORIA  
AT MELBOURNE

Court Reference: COR 2016 0308

**FINDING INTO FIRE WITHOUT INQUEST**

*Form 40 Rule 61(2)*

*Section 68 of the Coroners Act 2008*

Findings of: **JUDGE SARA HINCHEY, STATE CORONER**

Fire location: **WYE RIVER AND SEPARATION CREEK,  
VICTORIA**

Fire dates: 19-25 December 2015

Cause and origin: Lightning strikes in the Great Otways National Park,  
Otway Ranges, Victoria

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## **HER HONOUR:**

### **BACKGROUND**

1. On Friday 18 December 2015, the Bureau of Meteorology released the State Fire Weather Intelligence Briefing for the period 19 to 25 December 2015.<sup>1</sup> This briefing indicated that the forecast fire danger for Saturday 19 December 2015 was “*Extreme*” in four regions across the State, including the Barwon South West region, where Wye River is located.<sup>2</sup>
2. An “*Extreme*” Fire Danger Rating indicates very hot, dry and windy conditions.<sup>3</sup>
3. In a statement dated 30 June 2016, provided to me in the course of my investigation into this matter, it was observed by Mr Craig Lapsley, the Emergency Management Commissioner (**the EMC**), that “*under these conditions, a fire that starts and takes hold is likely to be uncontrollable, unpredictable and fast moving.*”<sup>4</sup>
4. On 19 December 2015, a lightning strike in the Great Otway National Park ignited what would, over the ensuing days, become a ferocious, uncontained fire which burned more than 2500 hectares of forest and destroyed 116 houses in Wye River and Separation Creek (**the Jamieson Track fire**). Thankfully, no lives were lost as a result of the Jamieson Track fire.

#### *Weather in the lead up to the ignition of the Jamieson’s Track fire*

5. In September each year, the Bushfire and Natural Hazards Cooperative Research Centre (**BNHCRC**) releases a seasonal outlook of the bushfire potential across Southern Australia. This information is used by fire and emergency management authorities to make strategic decisions for the upcoming fire season.
6. The Bushfire outlook issued in September 2015 pointed to “*an above normal season across most of Victoria.*”<sup>5</sup> Key indicators of this outlook were an extended rainfall deficit, drying conditions in eastern Australia that affect north westerly air patterns, and rain levels that did not soak soil profiles.<sup>6</sup>
7. In the Monthly Weather Review for December 2015 released by the Bureau of Meteorology, the maximum temperatures during December were well above average in a band extending

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<sup>1</sup> statement Craig Lapsley, Emergency Management Commissioner, 30 June 2016 (**statement Lapsley**), at p 2

<sup>2</sup> *ibid*

<sup>3</sup> *ibid*

<sup>4</sup> *ibid*

<sup>5</sup> statement Lapsley, at p 2

<sup>6</sup> statement Lapsley, at p 3

from the inland Pilbara to southeast Australia. Victoria recorded its warmest December on record, with a state-wide anomaly of +3.80°C, significantly higher than the previous record of +2.93°C in 1994.<sup>7</sup>

8. The State Fire Weather Intelligence Briefing released on the afternoon of 19 December 2015 predicted severe fire danger, lightning and a wind change for Sunday, 20 December 2015. The briefing also predicted hot overnight minimum temperatures and strong and gusty northerly winds, ahead of a westerly wind change crossing the State on the Sunday.<sup>8</sup>
9. In the Aireys Inlet area, the temperature peaked above 42°C at around 2.30pm on Saturday, 19 December 2015. The lowest overnight temperature of 26°C was recorded at 8.30pm on Saturday night and the temperature during early Sunday morning remained at around 30°C, with high winds.<sup>9</sup>
10. The CFA declared a Total Fire Ban for many areas of Victoria, including the area around the Otway Ranges. Total Fire Bans are declared by the CFA on days when fires are likely to spread rapidly and could be difficult to control.<sup>10</sup>
11. There was significant lightning activity across Victoria on 19 December 2015, including in the Otway Ranges. A number of fires were ignited across the State as a result of this lightning activity.<sup>11</sup>

## THE PURPOSE OF A CORONIAL INVESTIGATION

12. The jurisdiction of the Coroners Court of Victoria (**the Court**) is inquisitorial.<sup>12</sup> The *Coroners Act 2008* (**the Act**) provides for a system whereby reportable deaths and fires are independently investigated by coroners.
13. It is not the Coroner's role to lay or apportion blame, but to establish the facts.<sup>13</sup> It is not the Coroner's role to determine criminal or civil liability arising from a fire or death under investigation, or to determine disciplinary matters.
14. Section 31 of the Act provides that any person may request a coroner to investigate a fire.

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<sup>7</sup> *ibid*

<sup>8</sup> *ibid*

<sup>9</sup> *ibid*

<sup>10</sup> *ibid*

<sup>11</sup> *ibid*, at p 3

<sup>12</sup> Section 89(4) *Coroners Act 2008*

<sup>13</sup> *Keown v Khan* (1999) 1 VR 69

15. The Act provides that as a result of any investigation into a fire, a coroner must, if possible, make findings as to:
  - (a) the cause and origin of the fire;<sup>14</sup> and
  - (b) the circumstances in which the fire occurred.<sup>15</sup>
16. It is important to note that a coroner conducts an independent and thorough coronial investigation, regardless of whether or not an inquest is held, and will make written findings in relation to their investigation.
17. For coronial purposes, the circumstances in which a fire occurred refers to the context or background and surrounding circumstances of the fire. Rather than being a consideration of all circumstances which might form part of a narrative culminating in the fire, it is confined to those circumstances which are sufficiently proximate to be considered relevant to the fire.
18. On 26 January 2016 and 1 February 2016, the Court received requests from Gordon McComb and Andrew Allen (**the applicants**), respectively, for an inquest to be held to examine the circumstances of the Jamieson Track fire.
19. The matters raised by the applicants concern the following issues:
  - (a) the adequacy of the initial response to the Jamieson Track fire, including whether rappel crews ought to have been utilised in fighting the fire;
  - (b) the adequacy of the resources allocated to the fire response and in particular, the aerial support that was employed to fight the fire;
  - (c) the appropriateness of the decision to backburn/burn out;
  - (d) whether the Inspector-General for Emergency Management's (**IGEM**) report is independent and adequately addresses the issues which arise from the occurrence and handling of the fire; and
  - (e) the appropriateness of fuel reduction strategies employed prior to the fire.
20. On 10 February 2016, I notified the applicants that I had not yet decided whether to hold an Inquest into this fire.

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<sup>14</sup> Section 68(a)

<sup>15</sup> Section 68(b)

21. Following that date, and for the purpose of investigating the fire and determining whether to hold an Inquest, I received extensive additional materials from Emergency Management Victoria (**EMV**) and Department of Environment, Land, Water and Planning (**DELWP**). I also toured by vehicle, on foot and in the air, the area in which the fire ignited and subsequently burned.
22. In exercising my discretion whether or not to hold an inquest, I had regard to the Act, including but not limited to:
- (a) the Preamble of the Act;
  - (b) the Purposes of the Act;<sup>16</sup>
  - (c) section 7 of the Act, which expressly provides that it is the intention of Parliament that a coroner should liaise with other investigative authorities, official bodies or statutory officers to avoid unnecessary duplication of inquiries and investigation to expedite a coronial investigation;
  - (d) section 8 of the Act which sets out the factors a coroner should have regard to when exercising a function under the Act;
  - (e) section 9 of the Act which provides that the coronial system should operate in a fair and efficient manner.
23. On 20 September 2017, I decided not to hold an inquest into the fire (**Decision**). My Decision is 29 pages long and details the following matters:
- (a) observations about the terrain in the area of the fire;
  - (b) the fire risk in Victoria between 19 and 25 December 2015;
  - (c) the role of the DELWP;
  - (d) preparation for the increased fire danger;
  - (e) weather in the lead up to the ignition of the Jamieson's Track fire; and
  - (f) demands on State Resources in December 2015.
24. In my Decision, I responded in detail to the applicants' concerns, specifically:

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<sup>16</sup> Section 1 of the *Coroners Act 2008*

- (a) response to the fire – decision-making of those responsible;
- (b) initial response – 19 December 2015;
- (c) the days which followed – 20 and 21 December 2015;
- (d) back burning and burning out – 22 to 24 December 2015;
- (e) 25 December 2015;
- (f) independence of the IGEM; and
- (g) fuel reduction in preparation for fire risk.

25. My Decision is attached to this finding (**Attachment A**).<sup>17</sup>

## **MATTERS IN RELATION TO WHICH A FINDING MUST, IF POSSIBLE, BE MADE**

### **Cause and origin of the fire, pursuant to section 68(a) of the Act**

26. On 19 December 2015, within 20 minutes of each other, two fires were detected within the Great Otway National Park, approximately 8km apart. Each fire was the result of a lightning strike. The Jamieson Track fire was detected at 4.10pm<sup>18</sup> and the Lorne-Delaney's Road fire was detected at 4.30pm.<sup>19</sup>

### **Circumstances in which the fire occurred, pursuant to section 68(b) of the Act**

#### *Demands on State Resources in December 2015*

27. As was noted in the IGEM review, during the weeks leading up to the period of 10 to 25 December 2015, a number of fires placed considerable demands on the Barwon South West region's DELWP and CFA firefighting resources.<sup>20</sup>
28. There was a large fire at Mallala in South Australia, which called upon resources from the Barwon South West region. In addition, a grain fire on a ship at Portland and a peat fire in the

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<sup>17</sup> COR 2016 0308 Form 29 'Decision by Coroner whether or not to hold an inquest into Fire', dated 20 September 2017

<sup>18</sup> IGEM review, at p2

<sup>19</sup> statement Lapsley, at p 3

<sup>20</sup> IGEM review, p 12

Strathdownie area, also drew heavily on firefighting resources in the lead up to the Jamieson Track fire.<sup>21</sup>

29. Most notably, a fire at Scotsburn-Finns Road in the Ballarat region, had ignited on 19 December 2015. This fire was large and destructive, burning 4750 hectares of land over the next eight days and destroying 12 houses in the process. It was reported approximately one hour prior to the detection of lightning in the Otways area.<sup>22</sup>
30. Shortly after this, within 20 minutes of each other, two fires were detected approximately 8km apart, within the Great Otway National Park. Each was the result of a lightning strike. The Jamieson Track fire was detected at 4.10pm and the Lorne-Delaney's Road fire was detected at 4.30pm.<sup>23</sup>
31. Further significant fires occurred across the State on 20 December 2015, including a fire in the Barnawatha-Indigo Valley region, which burnt 6650 hectares and destroyed or damaged five residential properties, 28 sheds, 210km of fencing and 14 cars.<sup>24</sup>
32. In total, there were 488 grass, scrub and bushfires reported in the period between Saturday, 19 December 2015, to Saturday, 26 December 2015, with a total of 3739 incidents reported to the CFA, DELWP, Metropolitan Fire Brigade (**MFB**) and Victoria State Emergency Service (**VICSES**) over this period.<sup>25</sup> This included fires requiring large ground deployments and aerial fire suppression support at Wonthaggi, Epping, Wandin North, Marysville, Cann River and Mallacoota.<sup>26</sup>
33. These concurrent incidents placed significant firefighting pressure on the State's resources.<sup>27</sup>

#### *Initial response – 19 December 2015*

34. On 19 December 2015, DELWP and Parks Victoria had a total of 23 personnel rostered on across two shifts in the Barwon South West region. Some of these personnel were part of the pre-positioned crews prior to the ignition of the fires. A further 29 personnel were located in the Colac ICC.<sup>28</sup>

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<sup>21</sup> *ibid*; see also statement Lapsley, at p 3

<sup>22</sup> statement Lapsley, at p 3.

<sup>23</sup> *ibid*

<sup>24</sup> *ibid*

<sup>25</sup> statement Lapsley, at p 3

<sup>26</sup> IGEM review, p 12

<sup>27</sup> *ibid*

<sup>28</sup> IGEM review, at p 25



35. As referred to above, on 19 December 2015, numerous lightning strikes occurred in the Otway Ranges southwest of Lorne. During the afternoon, Mount Cowley observation tower reported smoke at two locations: one near Delaneys Road and the second near the Jamieson Track. The first report of the Jamieson Track fire was at 4.10pm.<sup>29</sup>
36. Within an hour of this fire report, fire behaviour experts at State level had started to predict the potential fire spread. This information was shared in order to inform planning and operational decision making.<sup>30</sup>
37. The fire spread simulation tool, Phoenix RapidFire, provides an indication of the potential impact area if no suppression activities are undertaken, based on a wide range of variables, including fuel availability, weather and topography.
38. Initial fire prediction maps were completed within an hour of the reports for both the Delaneys Road and Jamieson Track fires.<sup>31</sup> It is worthy of note that on the basis of these maps, at that time, the Delaneys Road fire was, arguably, the more threatening of the two fires.<sup>32</sup>
39. Although the two fires were relatively close together, the two ignition points were in different, deep gullies and therefore had the potential to threaten different areas of the Otway ranges. As a result, the available fire-fighting resources in the area needed to be shared between the two fires. Crews from both DELWP and the CFA, supported by large bulldozers, were initially deployed to both fires following the smoke reports.<sup>33</sup>
40. Nine personnel, one tanker, two Slip on Units<sup>34</sup> and a bulldozer were dispatched to the Jamieson Track fire, late afternoon on 19 December. A fixed-wing observation aircraft was also dispatched to assess the fire. Two further bulldozers were available and on standby, in case they were needed.<sup>35</sup>
41. The crew that were dispatched were not able to access the fire in their vehicles, encountering terrain that was densely forested, extremely steep and hazardous.<sup>36</sup>

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<sup>29</sup> *ibid*

<sup>30</sup> statement Lapsley, at p 9

<sup>31</sup> *ibid*

<sup>32</sup> *ibid*, and attachments R and S thereto

<sup>33</sup> statement Lapsley, at p 6

<sup>34</sup> a firefighting unit often on a 4 x 4 tray body vehicle with a small water tank (400 litres), a pump and length of hose

<sup>35</sup> IGEM review, at p 25

<sup>36</sup> *ibid*

42. It was determined that the preferred, and safest option, was to access the fire by bulldozer rather than using ground crews alone, given the very heavy fuels associated with tall stringybark forests, and forecast weather conditions.<sup>37</sup> The plan was for the bulldozer to construct a mineral earth track into the fire, an estimated distance of 1.5km.<sup>38</sup>
43. The crew did what they could to check on access to the fire while awaiting the arrival of a bulldozer. They were initially able to pick up a disused and extremely overgrown logging track, which nevertheless, assisted to a degree with access.<sup>39</sup>
44. The track ran for about 500m along the narrow ridgeline but then diverged away from where crews needed to go to attack the fire.<sup>40</sup>
45. After this point, the area was again densely forested, very steep and slippery.<sup>41</sup> Due to the dense forestation and heavy fuel loads associated with tall stringybark trees, access, even on foot, was extremely difficult and dangerous.<sup>42</sup>
46. Once it had arrived, the large bulldozer supported by ground crew, commenced constructing an access track, initially along the former logging track. After about 800m, the ridgeline became less obvious, and progressively steeper terrain was encountered. The air observer continued to provide support until dark, to ensure the bulldozer continued on the right ridgeline. Good progress was made.<sup>43</sup>
47. At approximately 6.00pm on 19 December 2015, a medium helicopter was dispatched by the State Air Desk to both fires, to undertake water bombing operations.<sup>44</sup> By this time, the Jamieson Track fire was estimated to be about one hectare in size.<sup>45</sup>
48. Given the conditions and observed fire behaviour at that time, the Incident Controller's expectation late on 19 December 2015 was that the Jamieson Track fire would be contained by midday on 20 December 2015.
49. The bulldozer reached the western flank of the fire at about 9.00pm and commenced work, tracking a short section to the south into a very steep gully. At this point, the fire behaviour

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<sup>37</sup> statement Lapsley, at p 6

<sup>38</sup> *ibid*

<sup>39</sup> *ibid*

<sup>40</sup> *ibid*

<sup>41</sup> IGEM review, at p 25

<sup>42</sup> IGEM review, at p 25; statement Lapsley, at p 6.

<sup>43</sup> statement Lapsley, at p6

<sup>44</sup> *ibid*

<sup>45</sup> *ibid*

was described as “*notable*”, with 1-2m flame heights and fire readily climbing to the tops of stringybark trees, which were in excess of 40m in height.<sup>46</sup> The fire was also observed to be spotting readily from the tops of the stringybarks, with spotover observed up to 50m across the gully at this time. The terrain was very steep with sections exceeding degrees.<sup>47</sup>

50. At this time, options were considered for the deployment of fire-fighting crews. In particular, consideration was given to the possibility of walking around the fire edge.<sup>48</sup>
51. The Sector Commander decided that it was unsafe for firefighters to proceed on foot, due to the strength and activity of the fire behaviour. He also concluded that attempting to construct a control line with hand tools would be futile, given that the spotting activity would immediately overrun any line which was able to be constructed.<sup>49</sup>
52. The Sector Commander also observed that there were a large number of overhead hazards, due to the fact that there were large trees with hollows burning within them, creating an inherent safety risk.<sup>50</sup>
53. It has been suggested that rappel crews ought to have been used to fight the Jamieson Track fire from an early stage. Rappel crews are normally dropped into a reasonably cleared area from which they walk to the fire zone. While both the terrain and safe access was difficult above Lorne, the area was not remote. As the United Firefighters Union (UFU) submission notes, a bulldozer track had been cut into the fire area within a matter of hours of it being detected. As such, rappel crews would not have been an appropriate initial attack strategy in this instance, given the timeframe for deployment, the time at which the fire started and commensurate safety risks.
54. At this time, firefighters were directed to continue to operate slip-on units in support of the bulldozer, which continued to be engaged in construction of a containment line.<sup>51</sup>
55. The crew continued to work on the containment line until there was no natural light left. For safety reasons, the crew was withdrawn to the bulldozer track at this time. The night crew of 10 personnel was shared across the two fires.

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<sup>46</sup> *ibid*

<sup>47</sup> statement Lapsley, at p 7

<sup>48</sup> *ibid*

<sup>49</sup> *ibid*

<sup>50</sup> *ibid*

<sup>51</sup> *ibid*

56. During this period, the Sector Commander and the bulldozer driver, both very experienced firefighters, recognised that the fire behaviour continued to increase and consequently determined that it was not safe to proceed further. The bulldozer withdrew to safer ground, arriving back up at the constructed track on the northern edge of the fire at about 12.30am on 20 December 2015. When the bulldozer began to withdraw at around 11.30pm, about 80% of the fire perimeter had been tracked.<sup>52</sup> Shortly after midnight, the Sector Commander noted that the temperature exceeded 30°C and the fire behaviour continued to increase.<sup>53</sup>
57. A watch was maintained on the Jamieson Track fire overnight. The intent was to recommence bulldozer operations during daylight hours on 20 December 2015.<sup>54</sup>
58. Mr Lapsley's analysis of the initial attack on the Jamieson track fire is as follows:

*"Despite best efforts in the first attack response to the Wye River-Jamieson Track fire, conditions were such that unacceptable safety risks to fire fighters prevailed. Control line construction on the night of 19 December 2015 was undertaken in very demanding conditions, with operations skillfully undertaken ..."*<sup>55</sup>

59. I accept Mr Lapsley's evidence in relation to this matter.

*The days which followed – 20 and 21 December 2015*

60. At 7.22am on 20 December 2015, it was estimated that the fire had grown to about five hectares in size. Due to spot-over occurring throughout the night, about 80% of the fire perimeter was by then, untracked.<sup>56</sup>
61. The Incident Management Team (IMT) requested aircraft at the fireground as soon as possible. It should be noted that aircraft were used extensively in managing the Jamieson Track fire, performing aerial observation, water and retardant bombing, transport and aerial incendiary functions.<sup>57</sup>
62. The medium helitack and support aircraft were airborne at 7.24am. Between 9.00am and 1.30pm, a total of seven firefighting aircraft, including four water bombers (two large air

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<sup>52</sup> *ibid*

<sup>53</sup> *ibid*

<sup>54</sup> *ibid*

<sup>55</sup> *ibid*

<sup>56</sup> *ibid*

<sup>57</sup> IGEM review, at p 21

tankers and two smaller tankers) and three helitacks (two medium, one large), had been dispatched to fight the Jamieson Track fire.<sup>58</sup>

63. It should also be noted that at the time of the ignition of the Jamieson Track fire, there were six major fires then alight which required water bombing resources to be allocated to them. In total, on 19 and 20 December 2015, aerial water bombing resources were deployed to approximately 32 fires (19 of which ignited on 19 December 2015 and a further 13 of which ignited on 20 December 2015). The deployments were required to places as far across the State as Barnawartha, Wonthaggi, Epping, Wandin North, Marysville/Buxton and Cann River.<sup>59</sup>
64. As the concurrent demands on the aerial water bombing resources were high, the State Air Desk, appropriately, allocated the available resources to these fires based on the State Strategic Control Priorities. Those considerations included the need to maintain capacity for readiness for other fires which might ignite across the State, due to the extreme fire conditions which then existed.<sup>60</sup>
65. Due to the fact that the Jamieson Track fire had jumped containment lines, in addition to the water bombing resources, additional bulldozers were also deployed to the fire.<sup>61</sup>
66. During the morning of 20 December 2015, fire intensity exceeded thresholds that are considered maximum for crews to successfully rakehoe control lines by hand. Thresholds for safe operation of machinery were also exceeded overnight, particularly in relation to fire intensity and terrain steepness. Under these conditions, successful direct attack on the fire was not possible due to weather, fuels and the exceedingly steep and inhospitable terrain.<sup>62</sup>
67. Decisions about safety are based upon a process of dynamic risk assessment informed by factors including continuous situational awareness, incident intelligence, fire predictions, weather prognosis and availability of resources.<sup>63</sup> Appropriately, this approach has been informed by the lessons of past events, most recently the findings and recommendations resulting from the inquest into the deaths of Katie Peters and Steven Kadar.<sup>64</sup>

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<sup>58</sup> IGEM review, at p 26

<sup>59</sup> *ibid*

<sup>60</sup> *ibid*

<sup>61</sup> statement Lapsley, at p 7

<sup>62</sup> statement Lapsley, at p 8

<sup>63</sup> *ibid*

<sup>64</sup> *ibid*; see also the Finding of Coroner Olle in the *Inquest into the deaths of Peters (COR 2013 0648) and Kadar (COR 2013 0649)*, dated 17 December 2015

68. Conditions continued to escalate during the morning, with fire increasing to 20 hectares in size by 10.25am.<sup>65</sup> The fire continued to be located in the extremely steep and inhospitable terrain which is a feature of the area. Two bulldozers constructed control lines, with the aerial water bombing resources assisting to slow the progress of the fire.<sup>66</sup>
69. Strengthening north-westerly winds led to a significant escalation in fire intensity from 12.30pm. Between 12.30pm and 1.00pm, the wind shifted to the west, associated with a frontal change, and the fire made a significant run, spotting across to the next ridge. Rain followed the frontal change and caused the aerial support to be grounded.<sup>67</sup>
70. At 5.40pm, the fire was estimated to be 65 hectares in size, with a 6km perimeter. Despite constant attention and best efforts, about 70% of the perimeter remained uncontained.<sup>68</sup> The continued risks to the safety of firefighting personnel posed by the steep, inaccessible slopes and inhospitable and dangerous terrain, meant that increasing the on-ground resources was not feasible.<sup>69</sup>
71. On the afternoon of 21 December 2015, the Regional Controller (**RC**), deployed a Level 3 Incident Controller to assess the fire management arrangements. The conclusion of this review was that there was a significant risk of the Jamieson Track fire developing into a major incident.<sup>70</sup> The RC subsequently discussed escalation of the incident with the DELWP Chief Officer and SRC. This led to a decision to upgrade the fire to a Level 3 incident.<sup>71</sup> The formal transition of incident control occurred at 4.18pm on 21 December 2015.<sup>72</sup>
72. By the afternoon of 20 December 2015, the IMT had commenced planning and analysing alternative options for controlling the fire. Iterations of these options were produced at 1.00pm on 20 December and 5.00pm and 10.00pm on 21 December 2015. On 21 December 2015, the Incident Controller (**IC**) expected the fire to be contained by late on 24 December 2015.<sup>73</sup> By the morning of 22 December 2015, this expectation was revised to the fire being controlled by late on 26 December 2015.<sup>74</sup>

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<sup>65</sup> statement Lapsley, at p 7

<sup>66</sup> *ibid*

<sup>67</sup> *ibid*

<sup>68</sup> *ibid*

<sup>69</sup> IGEM review, at p 29

<sup>70</sup> *ibid*

<sup>71</sup> *ibid*

<sup>72</sup> *ibid*

<sup>73</sup> IGEM review, at p 30

<sup>74</sup> *ibid*

73. The weather on 22 December 2015 was moderate, with cloud cover until early afternoon, temperatures below 20°C, and east/south-east winds of up to 9kmh. Temperatures were expected to increase to mid-20s on 23 December 2015, with winds remaining east/south-east and south-east at 10-15kmh. Expectations of considerably increased fire danger on 25 December 2015 remained.<sup>75</sup>
74. On the morning of 22 December 2015, the SCC, RC and IC conferred via a teleconference, to discuss the best way to approach the incident.
75. The final analysis included four options:<sup>76</sup>
- (a) Option 1: direct attack using helitak, aerial bombers and large air tankers in holding pattern;
  - (b) Option 2: establish and/or consolidate containment lines by hand, supported by bulldozers where practicable;
  - (c) Option 3: back burning from Jamieson Track/Wye Road (West) along Jamieson Track to the spur southeast of existing spotover in the east;
  - (d) Option 4: back burning from Jamieson Track/Wye Road to Great Ocean Road.
76. Option 4, involving back burning the unburnt areas between Jamieson Track and east to the Great Ocean Road was rated as having an 80-90% chance of succeeding. Option 3, with back burning of a lesser easterly extent, was rated as having an 80% chance of success. By contrast, options 1 and 2, which did not involve any back burning, were assessed as having a 20% and 50% chance of success respectively.<sup>77</sup>
77. The IMT analysed the options against cost estimates, fire fighting resource requirements and availability, estimated probability of success, consequences of failure and contingency requirements, risks to firefighters and the public, and broader economic, environmental and organisational impacts.<sup>78</sup> Taking these matters into account, the IC, together with team leaders of the IMT identified Option 4 as the approach that had the greatest chance of succeeding in

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<sup>75</sup> *ibid*

<sup>76</sup> *ibid*

<sup>77</sup> *ibid*

<sup>78</sup> *ibid*

containing the fire. The final options analysis was underpinned by a detailed assessment of relevant factors, including:<sup>79</sup>

- (a) the condition of existing tracks and firebreaks;
- (b) prediction of fire behaviour through use of the Phoenix RapidFire mapping tool;
- (c) an assessment of fuel moisture;
- (d) fallback and escape routes for fire crews;
- (e) access for vehicles;
- (f) limitations of the effectiveness of the use of retardant and water bombing as a method of fire control; and
- (g) the time available before expected escalation in fire danger.

78. The back burning strategy which formed Option 4 was formally approved at 1.00pm on 22 December 2015 by the SRC, comprising incident, region and state levels of control.<sup>80</sup>

79. Since it was recognised that if the back burning strategy failed, there was a risk of a much larger fire and therefore a risk to assets, the IC initiated planning for community engagement and safety strategies for communities to the north and south of the fire, as well as for the Great Ocean Road.<sup>81</sup>

80. As at 2.26pm on 22 December 2015, the Jamieson Track fire was estimated to be 141 hectares in size and had burnt upslope from its origin to the Jamieson Track. The edge of this section ran approximately 500m along the Jamieson Track.<sup>82</sup> Two sections in this vicinity were identified as being appropriate for back burning operations, viz:

- (a) from east of the section that had burnt out to the Jamieson Track, through to the Great Ocean Road (**the east section**);
- (b) from west of the section that had burned out to the Jamieson Track, through to Wye Road (**the west section**).<sup>83</sup>

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<sup>79</sup> *ibid*; see also statement Lapsley, at p 13

<sup>80</sup> *ibid*; see also statement Lapsley, at p 13

<sup>81</sup> *ibid*

<sup>82</sup> statement Lapsley, at p 14

<sup>83</sup> *ibid*



81. Once the back burning operations began on 22 December 2015, they progressed well,<sup>84</sup> with flame heights of 1-1.5m<sup>85</sup> and fire burning downslope from the Jamieson Track, as planned.<sup>86</sup> The time sequence of operations was recorded by aerial infrared linescan, which shows the progression of the back burn over 22 and 23 December 2015.<sup>87</sup> A small amount of incendiary ignition was also dropped into the fire zone on 23 December 2015, to target previously unburned or incompletely burned areas within the original area which the fire had moved through between 19 and 22 December 2015.<sup>88</sup>
82. As a result of the back burning operations and incendiary ignition which took place between 22 and 24 December 2015, very little fuel within the target area remained unburned.<sup>89</sup>
83. Reports from 24 December 2015 indicate that the fire was quiet throughout the day and remained within the existing containment lines. By this time, the crews were also finalising the back burning operations.<sup>90</sup>
84. Overall, reports indicate that the back burn progressed as had been planned, implementing the strategy of protecting against the fire spreading south, with northerly winds forecast for 25 December 2015. Final reports from 24 December 2015 indicate the helitak water bombing continued until late afternoon and that crews were actively patrolling and blacking out hotspots.<sup>91</sup>
85. With the back burning providing protection against the spread of the fire to the south, crews prepared containment lines on the northern side in preparation for a wind change which was expected for late on 25 December 2015.<sup>92</sup> For this purpose, crews cut, by using a bulldozer, a containment line along the north-west of the fire area, as well as along Jamieson Creek running along the north east flank of the fire area. By 10.00pm on 24 December 2015, the bulldozer had progressed up Jamieson Creek from the Great Ocean Road to a point halfway along the northern boundary of the fire.<sup>93</sup>

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<sup>84</sup> *ibid*

<sup>85</sup> IGEM review, at p 31

<sup>86</sup> statement Lapsley, at p 14

<sup>87</sup> *ibid*

<sup>88</sup> *ibid*

<sup>89</sup> *ibid*; the only notable area of unburned fuel was within a wet gully area in the west section. Attempts to burn out this section on 24 December 2015 were unsuccessful

<sup>90</sup> IGEM review, at p 31

<sup>91</sup> *ibid*

<sup>92</sup> *ibid*

<sup>93</sup> *ibid*

86. Aerial reconnaissance monitored the fire throughout the period 22 to 24 December 2015. This strategy was successful in reducing fuel and potential fire intensity as infrared mapping had previously identified 1000 hotspots in the original fire. In addition, the IMT undertook smoke modelling to assess the impact on towns and the Great Ocean Road.<sup>94</sup>
87. There were two flare ups during the night of 24 December 2015, which were successfully dealt with. By the morning of 25 December 2015, the fire was still within the established containment lines. The southern edge of the fire included a “*tongue*” that had burnt upslope to within 10m of the Jamieson Track during a fire run which had taken place on 21 December 2015.<sup>95</sup> Wind speed increased to a maximum of 19kmh late on the evening of 24 December 2015 and swung to the north north-east. Reports indicated that a maximum wind speed of 39kmh was expected for the early hours of 25 December 2015.<sup>96</sup>

#### *25 December 2015*

88. Due to the high fire danger which had been forecast for 25 December 2015, the fire control strategy focused on keeping the fire within the containment lines which had been built over previous days.<sup>97</sup> Northerly winds continued throughout 25 December 2015. For this reason, it was recognised that that any fire which jumped containment lines and was not quickly controlled, could expand and run to the south. The proposed strategy was for aircraft to immediately attack any spot-over that occurred.<sup>98</sup>
89. On 25 December 2015, day shift crews were deployed from 6.30am. Active patrols were undertaken along the Jamieson Track (which was still the southern boundary of the fire) to ensure that any areas of potential flare up were blacked out.
90. The Division Commander reported increasing winds by mid-morning, and crews were actively deployed along the Jamieson Track in a concerted effort to deal with hotspots and flare ups.<sup>99</sup> Aircraft were water bombing the fire on the morning of 25 December 2015.<sup>100</sup>
91. At about 11.00am, the Division Commander became aware of a flare up reported north of the Jamieson Track, in a steep gully downslope from the track.<sup>101</sup> There was heavy material,

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<sup>94</sup> *ibid*

<sup>95</sup> *ibid*

<sup>96</sup> *ibid*

<sup>97</sup> *ibid*

<sup>98</sup> *ibid*

<sup>99</sup> statement Lapsley, at p 14

<sup>100</sup> *ibid*; see also IGEM review, at p 31

<sup>101</sup> statement Lapsley, at p 14

likely from previously fallen tree limbs, which had caught alight and flared up. A slip on unit was directly working on this flare up and had called for tanker support as they were experiencing difficulty controlling the flare up.<sup>102</sup> The Division Commander was then advised that spotting had occurred across the Jamieson track.<sup>103</sup> The fire spotover is reported to have been started by a tree falling in an area that had previously been well burnt. As the tree fell, it provided additional, unburnt fuel which caught fire and started throwing embers as a result of the extremely hot and windy conditions.<sup>104</sup>

92. The spotover event included embers being thrown into a large stringybark tree.<sup>105</sup> From this elevated position, further spotting quickly occurred in the area immediately to the south of the Jamieson Track, which comprised a steep gully system.<sup>106</sup> Due to the proximity of water bombing aircraft at that time, water bombing operations on this spot fire occurred within minutes of it being reported.<sup>107</sup>
93. The Division Commander also called in a large bulldozer to support fire-fighting operations, but due to the steepness of the terrain in which the spot-over had occurred, there was no possibility of the spot fire being accessed by the bulldozer<sup>108</sup> or on ground crews.<sup>109</sup>
94. Despite best efforts, it quickly became obvious that the aircraft were not going to be effective in controlling the breakout.<sup>110</sup>
95. In accordance with the triggers previously agreed with the IC, community safety plans were initiated in response to the escalating risk caused by the rapid southward spread of the fire.<sup>111</sup> Crews were withdrawn from the fireground and CFA resources were readied in Wye River and Separation Creek, to give direct protection to houses.<sup>112</sup> The IC established an additional divisional command to support this effort.<sup>113</sup> Shortly after 11.30am, the IC initiated evacuations of Wye River and Separation Creek and closed the Great Ocean Road.<sup>114</sup>

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<sup>102</sup> *ibid*

<sup>103</sup> *ibid*

<sup>104</sup> IGEN review, at p 32

<sup>105</sup> statement Lapsley, at p 14

<sup>106</sup> *ibid*

<sup>107</sup> *ibid*

<sup>108</sup> *ibid*

<sup>109</sup> IGEN review, at p 32

<sup>110</sup> statement Lapsley, at p 15

<sup>111</sup> *ibid*; see also IGEN review, at p 32

<sup>112</sup> IGEN review, at p 32

<sup>113</sup> *ibid*

<sup>114</sup> *ibid*

96. As part of its planning for this contingency, the IC had expected that any fire spilling over containment lines would quickly move south over Godfrey Track, which runs south/south-east for about 2km from its junction with Jamieson Track.<sup>115</sup> Infrared scans taken immediately prior to and during the run of the fire to the coast, show the fire rapidly moving as expected,<sup>116</sup> with long distance spotting.<sup>117</sup> By 12.45pm the fire had crossed both Godfrey Track and Wye Road. At 2.00pm, another spot fire broke away 50m south of Wye Road on the western edge of the fire. The fire area rapidly increased from around 271 hectares overnight, to 600 hectares at 2.00pm and 1399 hectares by 4.17pm.<sup>118</sup>
97. Around this time, power was cut to Wye River as fallen electricity poles and live wires were causing an electrocution risk to fire crews. Fire activity with the potential to threaten Lorne was evidenced by 8.00pm. Two separate spot fires led to northerly spread of the fire up to the Cumberland Track, with flame heights of 2-3m.
98. With community safety strategies implemented, records show that the IC moved to prepare for the change of wind to the south west, which was expected in the evening between 7.00pm and 9.00pm. The IC closed the Great Ocean Road at Anglesea to the north of Lorne and initiated the evacuation of Lorne at 4.11pm.
99. Later on 25 December 2015, the fire was still under the influence of a strong northerly wind.<sup>119</sup> The expected early evening south-west change arrived much later in the evening of 25 December 2015. By 10.36pm on 25 December 2015, the fire was estimated to be 2080 hectares in size. A report, at 5.00am on 26 December 2015, notes that the change brought 3mm of rain, moderating the southerly progress of the fire, which stopped one km short of Kennett River, to the south of Wye River.<sup>120</sup>
100. Over 2500 hectares of forest was destroyed by the Jamieson Track fire, along with 116 houses in Wye River and Separation Creek.
101. In a post-bushfire building survey conducted by the Commonwealth Scientific and Industrial Research Organisation (CSIRO), it was noted that fire in the heavier fuels stored under and adjacent to the houses' subfloor area such as plastic water tanks, building materials, small garden sheds, boats and kayaks, also appear to have been a significant factors in many of the

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<sup>115</sup> IGE review, at p 32

<sup>116</sup> *ibid*

<sup>117</sup> statement Lapsley, at p 15

<sup>118</sup> IGE review, at p 32

<sup>119</sup> *ibid*

<sup>120</sup> *ibid*

losses. It was also noted by the CSIRO that the presence of wooden retaining walls and timber decking increased the chance of a particular house being lost to the fire.

## **FINDINGS AND CONCLUSION**

102. Having investigated the fire, without holding an inquest, I make the following findings pursuant to section 68 of the Act:

- (a) the cause and origin of the Jamieson Track fire was a lightning strike shortly before 4.10pm on 19 December 2015, in the Great Otways National Park;
- (b) the cause and origin of the Lorne-Delaney's Road fire was a lightning strike shortly before 4.30pm on 19 December 2015, in the Great Otways National Park; and
- (c) the fires occurred in the circumstances described above.

103. I direct that a copy of this finding be provided to the following:

- (a) Gordon McComb;
- (b) Andrew Allen;
- (c) Department of Environment, Land, Water and Planning;
- (d) Country Fire Authority;
- (e) Craig Lapsley, the Emergency Management Commissioner;
- (f) Emergency Management Victoria;
- (g) United Firefighters Union; and
- (h) Inspector-General of Emergency Management.

Signature:



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**JUDGE SARA HINCHEY**  
**STATE CORONER**  
Date: 23 May 2018

