IN THE MATTER of the Hazelwood Coal Mine Fire Inquiry

FINAL SUBMISSION OF ENVIRONMENT VICTORIA

Date of document	24 June 2014
Filed on behalf of	Environment Victoria
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Approach to the Issue of Mitigation and EV's Proposed Recommendations

1. Environment Victoria (**EV**) appeared before the Inquiry on the issue of mitigation and prevention of risk. EV's submissions concentrate on rehabilitation of the mine because, on the evidence, rehabilitation is a powerfully effective tool to protect against the risk that a fire of the kind that occurred in February 2014 and that so ravaged the community, will happen again.

2. Rehabilitation is a solution which should be given considerable weight in the Board's findings and recommendations because:

    a. Once rehabilitated brown coal is no longer exposed to air and therefore no longer flammable. It will remove the risk where it is done.

    b. GDF Suez has the experience and expertise to carry it out.

    c. It is already the subject of a statutory obligation. It is the quid pro-quo for the licensee's right to extract coal, and to do so in such proximity to the town of Morwell. That obligation includes progressive rehabilitation – the requirement to rehabilitate "in the course of doing the work". As GDF's Mr Faithfull said, the obligation to progressively rehabilitation is "part and parcel of being a community wise and environmentally wise mining business."

    d. A robust and lasting solution is warranted by the significance of the risk to the Morwell community of a mine fire occurring again.

3. Rehabilitation costs money and, like other aspects of mining, may involve complex processes. Both GDF Suez and the state emphasise the potential cost and complexity of rehabilitation.

4. Some fundamental economic relationships should be recalled:

    a. The mine fire of February 2014 was one of the worst public health and environmental disasters in the state's history. The costs of the fire exceeded $40M. The state and the community continue to be exposed to the risk of massive costs if significant areas of the coal batters remain exposed at the mine;

    b. GDF Suez is already obliged to rehabilitate the mine. It claimed that accelerating rehabilitation would incur increased costs but produced no evidence of the quantum of any incremental costs;

    c. In those circumstances GDF has less financial incentive than it could have to complete rehabilitation by the conclusion of mine life. Its rehabilitation bond of $15M was fixed in 1995 and is demonstrably inadequate to cover the costs of rehabilitation.

5. It is submitted that the Board should make the following recommendations.

Regulatory Regime

6. EV supports Counsel Assisting's proposed recommendation at [77-81] of CA's submissions, that amendments to s.40(3) of the MR(SD) Act be brought forward.

7. Schedule 15 of the *Mineral Resources (Sustainable Development)* Regulations 2013 be amended to specifically require that rehabilitation plans included within work plans for a mining licence must include consideration of the means by which progressive rehabilitation may mitigate fire risk.

8. Both DSDBI and VWA acquire as a priority, the expertise necessary to monitor and enforce compliance with measures to mitigate fire risk.

Changes to and Review of the Rehabilitation Plan

9. DSDBI (with assistance from reputable external consultants) review the 2009 rehabilitation plan (and the proposed 2013 Plan) with a view to:

    a. Identifying areas of the mine in which rehabilitation can feasibly be accelerated for the purposes of fire mitigation.

    b. Requiring an amendment of the Plan to oblige GDF Suez to complete rehabilitation of the areas identified in (a) in accordance with time-based milestones set out in an amended Plan;

    c. Determining whether the rehabilitation schedule should be generally amended to achieve better fire risk mitigation, taking into account legitimate operational constraints any practicable means of overcoming those constraints;

    d. To the extent that (and while) the existing schedule remains extant, DSDBI clarify its requirements in relation to the dates by which it requires parts of the mine to be rehabilitation under the current plan;

    e. DSDBI require time-based milestones for the achievement the next planned phase of rehabilitation required under the Plan (as extant or revised), and do so progressively thereafter;

    f. DSDBI specifically investigate the sources of overburden for use in rehabilitation of the mine;

    g. GDF undertake accelerated progressive rehabilitation in accordance with the review.

a. At a minimum there should be an annual review of progressive rehabilitation targets, to ensure scheduled rehabilitation is both underway and that the planning process for future rehabilitation has commenced.

b. The MRSD Act should be amended to require public reporting of progressive rehabilitation work plan compliance.

10. EV supports Counsel Assisting's recommendation at [4.4] of CA's submissions (page 48) - that GDF, with reputable external consultants, conduct a full risk assessment of the likelihood and consequences of risk of fire in the worked out batters of the mine. The assessment must consider the most effective fire protection for exposed coal surfaces in the worked out areas of the mine including rehabilitation, water coverage, coverage by earth or some other substance, treatment with a fire retardant or a combination of these approaches.

11. As to Counsel Assisting's recommendation in the previous paragraph, EV reads Counsel Assisting's reference to "final rehabilitation" as meaning rehabilitation that is not temporary. That is, it is rehabilitation that is intended to be permanent but that occurs during the life of the mine.

Rehabilitation Bond

12. Under s.79A of the MR(SD) Act the Minster has the power to require GDF Suez to assess its rehabilitation liability and to require that an auditor be engaged to certify that that assessment has been carried out in accordance with s.79A and is accurate.

13. The Auditor General consider conducting an audit under s.15 of the *Audit Act* (alternatively that DSDBI request the Auditor General to conduct an audit) of DSDBI's methodology and parameters for assessing the quantum of rehabilitation bonds it will accept under s.80 of the MR(SD) Act, at least in respect of the Hazelwood mine.

Recommendations Generally

14. EV's proposed recommendations are consistent with the Board taking a multi-pronged approach to the risk of fire at the mine. That approach is necessary in order to ensure that potential weaknesses in the risk-management matrix will not once again align to permit another costly environmental disaster.

15. While EV agrees with Counsel Assisting that a full risk assessment should be conducted to assess the likelihood and consequences of risk of fire in the worked out batters of the mine, and identify the range of available solutions, EV submits that it would be imprudent to leave the question of mitigation to that process. Without both strong

(pointed and concrete) findings and the safety-net comprising of a series of recommendations designed to promote fire-risk mitigation there is a real risk that new processes and reviews will generate little more than paperwork, bureaucracy and conditional obligations that ultimately achieve little. The basis for that conclusion is the evidence concerning:

a. the reactive and hands-off approach of the mine regulator;

b. the readiness of VWA to have concluded in evidence filed with the Inquiry that neither rehabilitation nor the use of a reticulated water system is a 'reasonably practicable' risk mitigation measure (a position from which it has now moved, acknowledging in evidence that "this is not the analysis we're applying in the circumstances. We have to see what GDF Suez does in terms of re-evaluating this risk. Clearly all the parameters have changed"[1]);

c. the unwillingness of GDF Suez to move from its current rehabilitation plan and its attitude that doing anything other than sticking to its plan is too hard.

16. EV submits that on risk mitigation there should be no more business as usual in the coal mining industry after what occurred at Hazelwood. The Board should make strong recommendations to ensure no Victorian community is subjected to a repeat of this disaster – an event which must now be seen as clearly avoidable.

17. EV advances the following propositions in support of its proposed recommendations.

Proposition 1: Major fire was a reasonably foreseeable consequence of un-rehabilitated batters.

18. Before February 2014 fire had occurred in the Latrobe Valley mines and in the Hazelwood mine specifically. Many of those fires were documented and known (or should have been known) to DSDBI, VWA and to GDF Suez:

a. Report of the Royal Commission in 1944, Yallourn;[2]

b. 1977 fire recorded in A History of Morwell Open Cut;[3]

[1] Niest, T1875
[2] Exhibit 59.

c. GHD report commissioned by the operators of the Hazelwood mine, following the 2006 fire;[4] and

d. GHD report commissioned by the operators of the Hazelwood mine, following the 2008 fire.[5]

19. The risk of fire, including specifically in the worked out batters, was documented in the mine operator's own policies:

a. Latrobe Valley Open Cuts Fire Protection Policy Revision 1, 1984;[6]

b. Fire Risk Analysis in the Worked Out areas of the Morwell Open Cut, 1992;[7]

c. Latrobe Valley Open Cut Mines Fire Service Policy and Code of Practice, 1994;[8] and

d. Hazelwood Mine Fire Service Policy and Code of Practice, revised 2007.[9]

20. GDF's own investigation into the September 2008 fire noted that a significant feature of that fire was its escalation into an uncontrollable state within a short time because of the inability of mine personnel to mount an effective initial response because of very difficult access into non-operational areas and insufficient fire-fighting resources.[10]

21. Despite that knowledge of the documented risk GDF did not carry out any or any meaningful risk assessment of the worked out batters or the non-operational areas of the mine where coal is exposed. In this respect it appears that there has been significant institutional knowledge failure on the part of GDF Suez.

22. Mr Graham's evidence, in answer to the question whether the risk of fire in the worked out batters was adequately recognised by GDF was that, "*hindsight's a great thing. … the fact that our enterprise risk management system looks at costs to the business in terms of fire to do with call systems, if you like, is not indeed the operating faces on the mine even … in terms of hierarchy of risk in terms of impact on the*

[3] KAW 27
[4] Statement of Rob Dugan, Exhibit 13, annexure 2
[5] Statement of Robert Dugan , Exhibit 13, annexure 6
[6] Statement of Richard Polmear, Exhibit 90, Annexure 2
[7] Statement of Richard Polmear, Exhibit 90, Annexure 3
[8] Statement of Kylie White, Exhibit 59, Annexure 29
[9] [9] Statement of Kylie White, Exhibit 59, Annexure 44
[10] Preziuso, ex 93, attachment 3

business, then a fire in the worked out batters does not fit in that category, and in terms of business risk, obviously we've had a huge event and we will ensure we won't have another event like that again. We didn't lose total production … In terms of how our business would look at that risk in the hierarchy that was there, an event of fire in the worked out batters of the mine doesn't fit in a high profile."[11] Mr Graham went on to say that that risk should now (post February 2014) 'fit within a high profile'.[12]

23. Both DSDBI and VWA were or ought to have been aware of the risk of a rapidly escalating fire in the mine. Mr Neist (for VWA) said that the extent of the fire of February 2014 had not been documented or foreseen but the fire ('something like what happened in February and March of this year') was foreseeable[13] and that there was a recognised threat in open cut coal mines to incursion from external fires including by burning embers.[14] Ms White (for DSDBI) agreed that exposed coal in worked out batters was a known fire risk and said that DSDBI and VWA were each aware that fire risk in a mine is high and can quickly take hold.[15]

24. It was Professor Cliff's opinion that the risk of fire in the worked out batters of the mine was not adequately recognised.[16]

Proposition 2: **There is a very clear link between rehabilitation and fire prevention.**

25. Exposed brown coal is a known fire risk. It is a particularly reactive form of coal, in part because it has a large surface area available to oxidation.[17] Isolating coal from the air can be achieved by covering it with an impervious layer such as overburden.[18]

26. Both of the work plans submitted by the mine and approved by the Regulator recognised that fire protection was a part of rehabilitation of the disturbed area of the mine. The 1996 work plan included, as part of its mine rehabilitation master plan, "fire protection". The 2009 work plan variation said, at [6.5] that:

> "There are 2 major tasks to be completed using overburden: (1) coverage of coal batters to provide fire protection and a nutrient base to support plant growth that in turn provides long-term batter stability;

[11] Graham, T2259-60
[12] Graham, T2260
[13] Neist, T1829
[14] T1863
[15] White, T1646
[16] Cliff,T2116
[17] Exhibit 91 – Expert Report of Professor Cliff, p 5.
[18] Exhibit 91 – Expert Report of Professor Cliff, p 6.

(2) placement of the balance of the overburden material on the floor of the mine to assist with counter-balancing acquifer pressures."

27. The 2013 Plan stated that benches are to be covered in overburden to reduce fire risk.[19]

28. Mr Faithfull said that provided the slopes are managed for vegetation, rehabilitation is a very effective fire prevention measure.[20]

29. Professor Cliff's opinion was that while re-profiling and capping the worked out areas of the mine would involve considerable cost but that it would ensure that that such events cannot occur. He said that "permanent rehabilitation is the ultimate solution which has to be done anyway … fundamentally if the coal can't be exposed to air it can't burn, it's as simple as that."[21]

30. Professor Cliff considered the question of temporary rehabilitation. He identified possible mechanisms including the application of fire retardant material to the batters (fly ash polymers, foams, gels, organic surfactant materials). His opinion was that 'they are theoretically possible and have practical difficulties and limitations. They all cost money, time and resources and have to be applied and maybe reapplied to be effective.'[22] It would be easier to apply various types of material to the batters when they have been laid back but there have been a number of examples of successful application to vertical and near vertical faces of coal. He said that a properly conducted risk assessment into the issue would explore the pros and cons of the various possibilities.

31. In Professor Cliff's opinion applying water spray to wet down coal faces could be effective, but there would need to be an adequate reticulated pipe network and water supply.[23] The evidence before the Inquiry is that presently, the mine's water supply cannot cope with peak demand.[24]

32. Professor Cliff discounted as completely untenable the 'alternative' embodied in the 1994 Code of Practice, of fire breaks and tanker fill points. He said that those

[19] Exhibit 88, Annexure 3, page 25
[20] Transcript, page 1981, lines 1-4
[21] Cliff, T2110-2111
[22] Cliff, T2111
[23] Cliff, T2170
[24] Cliff, T2170

measures are not effective in a large fire, particularly not where there are strong winds, fire weather and fast fire spread.[25]

33. Mr Incoll agreed that fire breaks, tanker filling points and wetting down some of the expose coal faces (as in the 1994 Code of Practice) was not adequate protection against widespread fires started by an ember shower.[26]

34. Mr Incoll said that exposed coal should be covered or wet (that is, all of the exposed area should be covered by water or insulated by dirt or other covering material).[27] If water protection was adopted, possible power failure would need to be allowed for.[28]

35. It was put to him by counsel for GDF that the implementation of those options would need to be subject to a risk assessment. Mr Incoll agreed, but said that "*it needs to be done notwithstanding in one form or another if an event of this nature is not to be repeated at some time in the future*".[29] Mr Incoll's opinion was that fire protection requirements should be included in the conditions of the mining licence. He said that, "*It's a very important part of the conditions to be allowed to operate a mine of this nature. It's not good enough to have them burying part of the rehabilitation document as a one page policy*.[30]

36. On the merits of temporary versus permanent mitigation solutions Mr Faithfull's evidence was that:

    a. There were a number of difficulties with temporary rehabilitation solutions proposed by other parties. Concerns were raised with the impacts that would have on the ability of the mine staff to visually monitor stability of batters.[31] Clay capping was also said to potentially interfere with access roads, drains and horizontal bores on the batters.[32]

    b. If temporary solutions are rejected the only way to cover exposed coalfaces is

[25] Cliff, T2205
[26] Incoll, T2216
[27] Incoll, T2209
[28] Incoll, T2216-17
[29] Incoll, T2209
[30] Incoll, T2215
[31] Faithfull, T2015-2016
[32] Faithfull, T2017-2018

by rehabilitation;

c. the advantage of permanent rehabilitation over temporary measures was that it entailed profiling of batters to achieve a 3:1 slope which allowed access. [33]

37. EV submits that rehabilitation has some advantages over use of water sprays and the temporary covering of batters.

38. First, because full rehabilitation involves the 'laying back' of the batters, reducing their steepness, the batters are more accessible to fire fighters.[34] Having a less steep slope would overcome some of the difficulties expected to be incurred in temporarily covering the batters, identified by GDF Suez. For example, permanent rehabilitation would address any stability issues, meaning these issues would not need to be dealt with on an ongoing basis and visual inspection of batters would no longer be required.

39. Second, unlike water protection, rehabilitation, as a means of fire prevention, does not rely on decisions by people to activate it, nor does it rely on technological aspects such as having access to electricity and pipes not failing. Once completed properly, it is immune from human error and technological failure.

40. Reticulated water systems need to be turned on and working successfully if they are to prevent fire. Evidence was given that loss of electricity to parts of the mine on the first night of the fire affected several pumps that power reticulated fire-fighting services, rendering those services useless as a means of fire control.[35] Whilst this technical failure affected fire-fighting, rather than prevention, it demonstrates that technology can fail at critical times.

Proposition 3 – GDF closed its eyes to the obvious link between fire risk and the need to rehabilitate or cover exposed coal

41. Mr Faithfull said that there were two means of protecting against the fire risk posed by exposed coal – to insulate the exposed coal in one way or another, or to have in

[33] Faithfull, T1977-1979
[34] Faithfull, T980
[35] Statement of David Shanahan, [98], [102].

place an adequate fire system.[36]

42. When it was put to him that the 2009 rehabilitation policy specifically recognized covering exposed coal batters in the course of progressive rehabilitation as a fire prevention measure, he said he did not recall the detail of the policy.[37] He agreed, though, that one of the functions of rehabilitation was to serve as fire protection for exposed batters.[38] This was not, however, something that GDF considered in the course of planning progressive rehabilitation of the mine. Mr Faithfull said that he was "not responsible for fire service planning"[39] and that his working assumption was that the areas of the mine that aren't covered by rehabilitation were covered by the fire service network. He assumed, without making any enquiries, that the fire service network was sufficient to protect against the risk of fire in un-remediated worked out areas of the mine.[40] He did not think about it because it was 'not his area of responsibility.'[41]

43. This evidence revealed a 'silo' mentality within GDF ('not my responsibility'), the result of which was that GDF overlooked or ignored what should have been an obvious link between rehabilitation and mitigating a major risk created by GDF's mining operation. Despite the fact that the rehabilitation policy itself squarely recognized fire mitigation as a purpose of rehabilitation, GDF's practices did not.

Proposition 4: GDF has a fundamental obligation to progressively rehabilitate, the effect of which has been attenuated by a weak rehabilitation plan that contains no clear milestones

44. Section 81 of the MR(SD) Act provides a licence holder must rehabilitate land in the course of doing work under a licence and must, as far as practicable, complete the rehabilitation of the land before the authority ceases to apply to the land. Mr Faithfull, GDF's rehabilitation manager, said that that obligation was "part and parcel of being a community wise and environmentally wise mining business." [42]

[36] Faithfull, T2007
[37] Faithfull, T2007
[38] Faithfull, T2008
[39] Faithfull, T2007
[40] Faithfull, T2008-2009
[41] Faithfull, T2009
[42] Statement of Faithfull

45. The mining licence under which GDF Suez operates requires it to progressively rehabilitate the land the subject of it licence (clause 15). However the substance and effect of that obligation is ultimately dependent upon the quality of the Work Plan, in particular the rehabilitation plan contained within in. The licence requires GDF to undertake progressive rehabilitation, "as per the rehabilitation plan". That plan forms part of the licence and is approved by the Mining Regulator.[43]

46. The 2009 Work Plan (**the Plan**) is deficient as a tool to ensure that progressive rehabilitation occurs in accordance with any objective criteria. It did not and does not function as an effective means of active regulation of the mine operator.

47. First, the Plan contains time-based milestones only in a limited sense. It lays out a series of 'conceptual stages' which link rehabilitation to the completion of mining stages within blocks of the mine. Essentially the plan provides that overburden mined from certain parts of the mine will be 'scheduled for placement' on exposed batters and on the floor of other nominated parts of the mine.[44] The result was that most of the rehabilitation work will be done in the last 3 years of mine life.[45]

48. GDF's understanding of the requirement to rehabilitate under the Plan was (until evidence was given by DSDBI in the Inquiry) that it was not required to *commence* rehabilitation of relevant parts of the mine until mining of coal in the corresponding block of the mine (from which overburden would be sourced for the rehabilitation), was *completed*. [46] On this point GDF adopted a reading of the Plan that was the most generous to it. It was neither explicit nor implicit in the Plan document itself, that GDF either needed or was permitted to wait until coal mining (as opposed to over-burden mining) was complete, in order to commence rehabilitation of the relevant section of the mine, or that it must have merely *commenced* rehabilitation rather than have *completed* it by the end date for the relevant mining phase.

49. DSDBI took the opposite view. It considered that by the mining schedule end date for the relevant block (table 5.1 of the Plan) GDF was to have completed rehabilitation of the corresponding area of the mine (Section 6.5).

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[43] First statement of Kylie White; statement of Faithfull
[44] 2009 Work Plan at 6.5 (Progressive Rehabilitation/Staging)
[45] Statement of Faithfull; evidence of White
[46] See evidence of White, by reference to Plan at Table 5.1 and evidence of Faithfull

50. GDF and DSDBI had not discussed that difference in interpretation of the Plan. DSDBI had not put its understanding of the Plan to GDF and had not asked it how it was going to meet the timeframes that it understood were imposed.[47]

51. The difference in view between GDF and DSDBI is telling in two important respects. It demonstrates the poverty of the Plan to embody any clear and enforceable progressive rehabilitation obligation. If there was misunderstanding it was permitted by the nebulousness of the Plan. It also evidences failure by the regulator to communicate, monitor or enforce at a very basic level, what was required to be done and by when. That was a regulatory failure on a practical level, of a most basic kind.

52. Parts of the mine that had been scheduled for rehabilitation to commence (on GDF's view) in 2009 and in 2029 were burned in the 2014 fire.[48]

53. Second, the Plan accepts without question, that overburden must be sourced as a by-product of progressive mining operations in the sequence proposed (as set out at [6.5]). It does not contemplate that overburden might be sourced from elsewhere in the mine, or externally. Mr Faithfull said that those options were at least possibilities.[49]

54. Third, the Plan appears to assume that the need to access operating infrastructure, will be inconsistent with progressive rehabilitation of parts of the mine on which infrastructure is situation.[50] Mr Faithfull said that some infrastructure within the mine could not be feasibly relocated or replaced – for example the coal conveyors along the southern and south eastern batters.[51] However otherwise, one of the steps in rehabilitation is the moving, re-location and re-building of infrastructure sited on parts of the mine that on which rehabilitation works occur.[52]

Proposition 5 – Cost and complexity do not preclude accelerated rehabilitation

55. GDF's evidence (through Mr Faithfull) was in substance that rehabilitation is complex

[47] Faithfull, T1999-2000
[48] Statement of Faithfull, [39]-[40]; [42]-[43]
[49] Statement of Faithfull, [34(e)]
[50] Plan, at 6.3 (third dot point under, "Infrastructure").
[51] Statement of Faithfull, [36]
[52] Statement of Faithfull, [34]

and costly and that it needs to keep in step with the mining schedule.

56. Mr Faithfull agreed that:

    a. The steps he identified as being required in rehabilitation would be required no matter when rehabilitation occurred;[53]

    b. The particular steps required for rehabilitation were not impediments in the sense that GDF would lack the capability to undertake them, or that they would preclude progressive rehabilitation occurring.[54] He agreed that he had simply identified a number of steps that are admittedly complex but that would need to happen in the course of any remediation and would need to be thought about.[55]

57. The evidence was that GDF would prefer to source the overburden used for rehabilitation from within the mine and ideally, for each stage, from near to the part of the mine being rehabilitated. [56] Mr Faithfull agreed, however, that it was ultimately going to be necessary for GDF to move rehabilitation material around the mine in order to complete rehabilitation.[57] In his statement he identified as a possibility, the importation of overburden from different parts of the mine, sourcing it specifically for rehabilitation rather than relying on coal mining by-product, or sourcing it externally.[58]

58. GDF proffered no evidence in support of the contention that rehabilitation could not be accelerated other than the evidence that it would involve undertaking the steps that Mr Faithfull identified, that it would require sourcing overburden material and that it would cost more.

59. GDF did not proffer any evidence of:

    a. Why it could not source overburden material from parts of the mine other than those nominated in the 2009 Plan (or the 2013 Plan) as sources for rehabilitation of corresponding worked out areas;

    b. Any investigations it had made about sourcing overburden in that way,

[53] Faithfull, T2002
[54] Faithfull, T2002-2006
[55] Faithfull, T2006
[56] Faithfull, T1998
[57] Faithfull, T1998
[58] Statement of Faithfull, [34(e)]

sourcing it from the over-burden dump[59] or sourcing it externally;

c. The incremental costs of varying the Plan, or accelerating rehabilitation of any part of the mine including the Northern Batters. There was not a single costing, projection or budget offered in support of the claim to increased costs.

60. It is clear that the rehabilitation 2009 Plan (and the 2013 Plan) were formulated without any real consideration of the utility of advancing rehabilitation for the purposes of mitigating fire risk (despite the statements in the Plans identifying the link between risk mitigation and rehabilitation). The Plan should now be reviewed and reformulated with a view to achieving risk mitigation and well as the broader objectives of rehabilitation.

61. GDF has evidently not accorded priority to progressive rehabilitation. Mr Faithfull could give no reason for not having commenced the process entailed in the next phase of rehabilitation required under the plan (before the 2014 fire), other than that it was not a priority. He could not say when he would commence a stability assessment for that phase. [60] That attitude is hardly surprising given the loose regulatory regime which has permitted it.

62. EV's proposed recommendations, if made, will advance the process in a sensible way, injecting some real practical milestones and accountability where they have been demonstrably lacking.

Proposition 6: Regulatory failures have limited effective fire risk mitigation and should be remedied

63. Prior to the fire neither DSDBI nor VWA considered that it was their responsibility to ensure appropriate risk assessment and management was undertaken by the mine to prevent fire in the worked out and non-operational areas of the mine in order to protect the population of Morwell. The consequence was that the risk to the community of Morwell was never taken seriously by the regulators.

[59] Ms White's evidence was that DDSBI have commenced 'discussions' to see whether overburden can be sourced from the overburden dump
[60] Faithfull, T2000

64. DSDBI does not consider that risk of mine fire and its prevention is within its oversight, and the WVA does not (or did not historically) consider risk of fire in the worked out and non-operational areas of the mine to be a 'major mining hazard'.

DSDBI

65. Ms Kylie White was very clear that since 2008, fire prevention has not been the responsibility of DSDBI. She said that, "*we don't regulate fire, we don't have fire expertise*".[61]

66. The position taken by DSDBI is notwithstanding that the objectives listed in section 2 of the MR(SD)Act are, amongst others, to:

> *establish a legal framework aimed at insuring that-*
>
> *(i) mineral and stone resources are developed in ways that minimise adverse impacts on the environment and the community; …*
>
> *(vii) The health and safety of the public is protected in relation to work being done under a licence*.

67. While regulators must be conscious of the limits of their regulatory jurisdiction, the segregation of fire risk from mining operations (including rehabilitation) has been absolute and inflexible, and has had the consequence that no agency has considered risk holistically.

68. In 2009 when major changes to the mining license were being considered in the context of a required amendment to the Latrobe planning scheme, the EES panel explicitly warned about the risk fire in the mine. DSE submitted to the panel that flattening and capping batters (rehabilitation work) would achieve the 'not insubstantial benefit of mitigating fire risk.'[62] DSDBI must be taken to have had knowledge of this consideration since that publication of the panel's report in 2005. That the significance of that conclusion could be sidelined because of an insistence on the strict limits of regulatory responsibility is bewildering. This is particularly so given the existence of an MOU between DSDBI and VWA, which would, if

[61] White, T1607
[62] First Statement of White, [99]-[101]

implemented, have facilitated a mutual understanding by both regulators of the need to regulate the fire risk of the worked out mine batters, pro-actively.

69. Similarly bewildering is Ms White's evidence that the clear statement in the 2009 rehabilitation plan linking rehabilitation and fire risk, merely is a "comment by GDF".[63]

70. The Mining Regulator considers that its role is to review what is designed and implemented by the mine operator. In the context of seeking to answer whether and how rehabilitation could be accelerated in order to mitigate fire risk, DSDBI's evidence was that, "the licensee is in a better position that DSDBI to know whether and how to prepare a proposal to accelerate rehabilitation." [64] EV submits that that approach to regulation is overly passive. Passivity is also evident in the failure of the regulator to convey to GDF just what it expected to be done by way of rehabilitation and when, under the Plan, which is the sole embodiment of any regulatory obligations on GDF in its working and rehabilitation of the mine.

71. The 'hands-off' approach has created a leadership vacuum of real consequence. By leadership we mean (at least) taking responsibility for asking whether the consequences of the mining operation are addressed in a way that adequately protects the community in both the short and long term and for ensuring that real protections are in place.

72. DSDBI has taken a very strict and, EV submits, unjustifiably limited reading of the matters which a rehabilitation plan may address. That narrow reading of schedule 15 to the MR(SD) Regulations was proffered by Ms White as the reason that DSDBI did not consider fire risk when regulating rehabilitation.[65] In our submission a plain reading of Schedule 15 would permit a rehabilitation plan that had as one of its objects, the mitigation of fire risk.

73. Ms White indicated that DSDBI would welcome reform that would facilitate DSDBI's addressing fire risk in the context of rehabilitation. While that acknowledgment is to be commended, it is of concern that the view is nevertheless taken that the mine

[63] Evidence of White
[64] Statement of White at [190]
[65] Evidence of White

operator is the driving party in determining what if anything can be done differently.[66]

74. Further none of the reasons identified by Ms White for any proposal to address fire risk mitigation in a work plan or rehabilitation plan to proceed 'with care'[67] differ from those identified by Mr Faithfull. They are simply aspects of rehabilitation that would require consideration at any stage and (for the reasons submitted above) are not of themselves reason not to advance rehabilitation and certainly not to permit a 'go-slow' attitude.

75. EV submits that in framing recommendations the Board should be mindful of the limited reading that the mining regulator has taken of its own functions and of the relatively passive role it has adopted in relation to GDF.

VWA

76. Mr Neist's evidence on whether the VWA was responsible for the management of the risk of fire in the worked out batters of the Hazelwood mine was a qualified yes – the qualification depending on the precise definition of the risk of fire.

77. Mr Neist's analysis appeared to stem from the fact that GDF had not identified that the risk of fire in those areas of the mine could be a 'major mining hazard'. On this issue it appeared that VWA had accepted GDF's position. Mr Neist said that, *"That's the position the duty holder has made and we have no information to contradict or question that position*."[68] The concentration by the VWA on the identification of 'major mining hazards' appeared to follow from the fact that the VWA concentrates its regulatory efforts on the hazards with the potential to cause the most harm. Nevertheless, GDF Suez is (among other things) required under Part 5.3 of the OHS Regulations to identify *all* mining hazards, assess the risks to health and safety from those hazards and adopt risk control measures that eliminate, so far as is reasonably practicable, those risks, or reduce them if it is not reasonably practicable to eliminate them.

[66] Statement of White, [190]
[67] First statement of White at [189]
[68] Neist, T1821-1822

78. There was no evidence that GDF had assessed the risk of fire in the worked out batters. Such a fire would at least constitute a 'mining hazard', and may constitute a 'major mining hazard', depending on the circumstances.

79. On the question of whether the obligation in s.23 of the OH&S Act applied to the February 2014 fire, Mr Neist's evidence was contradictory and unconvincing. He initially offered the firm view that effect of the February 2014 fire on the population of Morwell "*did not arise because of the conduct of the undertaking. The undertaking is to extract brown coal from the earth and transport the brown coal to a power station; there is nothing in that conduct that caused this fire.*"[69] That reading lacked common sense and was unduly narrow. EV supports the submissions of Counsel Assisting in this respect.

80. Mr Neist initially said that the regulation of fire in the worked out and non-operational parts of the mine appeared nobody's job – there was a gap in regulation.[70] He later said that in fact there was no gap in regulation.

81. On mitigation measures, the VWA's positon as initially articulated to the Board was that key mitigation measures (rehabilitation or the installation of an effective reticulated water system) were not 'reasonably practicable' measures (and thus, GDF was not obliged to implement them). As discussed below, the VWA did not maintain that position. VWA had offered that view without having conducted or received from GDF any meaningful risk assessment of fire in the worked out batters of the mine.

<u>Regulation - Conclusions</u>

82. Despite the existence of an MOU and an attitude of formal co-operation between the Mine Regulator and VWA, the regulatory system has allowed the serious risk to the community of fire in the un-rehabilitated parts of the mine, to slip between the cracks. Both regulators have adopted narrow, inflexible attitudes towards regulating fire risk. The result was a preventable but major environmental disaster.

83. At present, on whether and how much to mitigate risk, GDF Suez is being left to

[69] Neist, T1818
[70] Neist, T1815

balance the costs to them against the cost to the community. Leaving this exercise in the hands of a private for-profit organisation cannot be good policy, because the community will come out behind every time.

Proposition 7: Rehabilitation is a reasonably practicable measure for mitigation of fire risk

VWA's Position

84. The significance of 'reasonably practicable' risk mitigation measures for the purposes of OH&S regulation is set out in the submissions of Counsel Assisting, which EV respectfully adopts. In short, GDF must take reasonably practicable measures to discharge the duties to which it is subject under the OH&S Act and regulations to eliminate or reduce risks to health and safety.

85. Mr Neist initially said (in his statement of evidence) that there is a known risk of exposed coal catching fire but it is unlikely to result in death or serious injury. The degree and likelihood of harm from a fire (which he said would not represent an "immediate or identified risk of death or serious injury") is much less than is likely to result from major mining hazards, on which VWA concentrates its regulatory efforts. He went on to conclude that given the 'cost and feasibility of rehabilitation' compared with likelihood of fire and degree of harm, rehabilitation is unlikely to be considered a "reasonably practicable" control measure for dealing with this hazard.

86. Similarly the cost of installing and maintaining a fire services system that would be effective in controlling a coal fire would not be a 'reasonably practicable' measure for mitigating risk.

87. There was no costing of either measure in Mr Neist's evidence nor any specific evidence about 'feasibility', nor any consideration of a proper risk assessment (no such assessment had been done).

88. Mr Neist did not maintain the position described in his witness statement. He conceded, when cross-examined, that it cannot now be concluded that rehabilitation is not a reasonably practicable measure that could be used to control the risk of fire in the mine. He said that under the circumstances (since the fire) – "*we have to see what GDF does in terms of re-evaluating the risk. Clearly all the parameters have changed; the smoke and ash impact I believe wasn't a major foreseeable event; It is now known*

it can occur; so the whole risk has to be re-assessed. We will expect GDF to demonstrate, so far as is reasonably practical, they are putting the right controls in place."[71] He agreed that it is still very much an open question that rehabilitation could be a reasonably practicable measure to mitigate the risk of fire in the mine, and said that "*rehabilitation is one of the risk controls for fire prevention that must be considered, there's no argument there*".[72]

Reasonably Practicable Measures – s20(2) Factors

89. Section 20(2) of the *Occupational Health & Safety Act 2004* (Vic) provides that regard must be had to specific matters in determining what measures are 'reasonably practicable' and will discharge the duties imposed under the OH&S Act and regulations.

90. There is evidence on which the Board can conclude that advancing progressive rehabilitation of the mine is a reasonably practical measure to mitigate the risk to the community of fire in the worked out batters, or at least on which it may conclude that that measure cannot be excluded as a reasonably practicable measure.

91. When considered together, the elements of the s.20 calculus strongly suggest, in EV's submission, that before the fire GDF ought to have identified progressive rehabilitation at least in the Northern Batters, as a 'reasonably practicable' measure, and that in any case, both it and VWA must now re-assess rehabilitation for the purposes of GDF's obligations under the OH&S regulatory regime.

S.20(2)(a) – likelihood of the risk eventuating

92. Mr Neist agreed said that "the likelihood of fire in an open cut coal mine is high"[73] and that the likelihood of the risk eventuating should be given real weight in the s.20 calculus.

s.20(b) Degree of harm that would result of the hazard or risk eventuated

93. Professor Douglass Campbell gave evidence of the risk of medium to long-term health effects that could materialize in the population of Morwell as a consequence

[71] Neist, T1875
[72] Neist, T1875
[73] Nest, T1864

of the 2014 fire. It is accepted that more research on the health consequences is needed and that there is no certainty about the likelihood of those consequences materializing as a result of the bushfire risk itself materializing. Nevertheless, the evidence of Professor Campbell is a sufficient basis on which to conclude that there could be significant harm to some people in the community should a fire of the kind that burned in February 2014, occur again.

94. Mr Neist did not agree that there was any likelihood of harm to the community from a future fire[74] but did agree that it was a fact that 'should be considered and will be considered in terms of future risk assessments.[75] He said that, on the issue of exposure of the community to harm, "*in light of the events that have happened, … we're putting a different focus on that. The problem is, leading up to this single event there wasn't a lot of weight put on the potential for that flow-on impact*."[76]

95. A further consideration is that the 'degree' of harm can be measured by the breadth of its reach in the Morwell community. Many people suffered as a consequence of the 2014 fire. The harm was spread very widely even if it may have been in some respects transient and did not travel as deeply as it might have.

96. EV submits that while the precise circumstances of the fire were evidently not contemplated, that a fire or its smoke and ash impacts could spread to the community is a factor that ought to have been factored into the s.20 calculus by both GDF and VWA before February 2014, and which ought to have real weight in any assessment now made.

s.20(2)(c) what the duty holder knows or ought reasonably to know about the hazard, the risk and any ways of eliminating or reducing the risk

97. There is substantial evidence that at the very least GDF ought to have known of the hazard. Mr Neist agreed that the risk was foreseeable. He agreed that the flammable nature of brown coal, the situation of Morwell in a high bushfire risk area and the threat of incursion of embers in open cut mining were all

[74] Neist, T1867
[75] Neist, T1867
[76] Neist, T1865

recognized.[77]

98. GDF itself identified rehabilitation (covering batters with over-burden) as a means of reducing fire risk. That 'ways of eliminating or reducing risk" was recognized in both GDF's Work Plan and its Code of Practice. Mr Neist agreed, the fact that GDF has itself identified means of reducing the hazard is relevant to the s.20 calculus.[78]

s.20(2)(d) *the availability and suitability of ways to eliminate or reduce the hazard or risk*

99. GDF Suez is already committed under its licence to progressive rehabilitation. As Mr Neist agreed, it is most relevant to consideration of this factor that the duty holder is required to undertake rehabilitation.[79]

100. Mr Neist went on to say that "it's up to the duty holder to consider all the potential – all the technically feasible risk controls, assess the price or the cost or the economic impact of doing that *to the mine and the community* and then choose which one it's going to work with." A question was whether there were other risk controls that can be done at a fraction of the cost. [80] It is apparent that before the fire, neither GDF nor the VWA assessed and compared available risk measures.

s.20(2)(e) the cost of eliminating or reducing the hazard or risk

101. Mr Neist agreed that in considering the cost or eliminating or reducing the risk the VWA's policy document ("How Worksafe applies the law in relation to Reasonably Practicable") decribed 'the right way to assess the relevance of cost'.[81] The policy provides (at page 4) that:

> There must be a clear presumption in favour of safety. Once the likelihood and degree of harm form a hazard or risk is understood, and the availability and suitability of a relevant safety measure to eliminate or reduce the hazard or risk is established, that safety measure should be implemented unless the cost of doing so is so disproportionate to the benefit (in terms of reducing the severity of the hazard or risk) that it would clearly be unreasonable to justify the expenditure …. Moreover the question of what is 'reasonably practicable' is to be determined objectively, and not by reference to the duty-holder's capacity to pay or other particular circumstances. …. If a duty holder cannot afford to implement a control that is not so disproportionate to the risk as to be clearly unreasonable, the duty-

[77] Neist, T1863
[78] Neist, T1868
[79] Neist, T1868
[80] Neist, T1870
[81] Neist, T1870

holder should not engage in the activity that gives rise to the hazard or risk. … A calculation of the costs of implementing a control measure must also take into account savings from fewer incidents, injuries and illnesses, potentially improved productivity and reduced turnover of staff.

102. It is highly relevant in considering the 'cost' aspect of the s.20 calculus, that GDF must already incur the costs of rehabilitation of the mine. Rehabilitation costs are not new costs – they are already required of GDF. Both GDF and Mr Neist referred to the prospect of additional costs to rehabilitate sooner but neither substantiated those references by any actual costings.

103. The costs of not reducing the risk are also of real significance, given the high likelihood of fire in the mine.

104. Given that the degree of harm is so significant, and the mine was required to undertake rehabilitation in any event, the additional cost of faster rehabilitation cannot be considered to be so disproportionate as to not be reasonably practicable. In other words, the potential costs to the state and the community are so high that accelerated rehabilitation should be required.

105. The following evidence was given during the hearing of the costs of the fire:

a. Mr Lapsley said that the cost of the emergency operation cost $32.5M, a figure which does not include the cost of volunteer labour;

b. Mr Alan Hall from the Department of Human Services gave evidence that the following financial assistance would be provided by the government to the community in Morwell:

i. Approximately $1.25M on relocation payments;

ii. Approximately $2.10M on respite payments;

iii. $2M for a community assistance package;

iv. $2M for a business relief fund;

v. a share of $2.35M to support the economic recovery of communities effected by bushfires in January and February 2014; and

vi. a share of $2.3M for a range of psychological and community support measures.

106. This is a total cost of approximately $7.35M with a further share of $4.65M.

107. The total calculated cost of the fires is therefore approximately $40M. However, it should be remembered that this amount excludes the value of volunteer labour and does not account for the public health cost.

Proposition 8 - the Rehabilitation Bond is inadequate and should be re-assessed

108. A rehabilitation bond of $15m was lodged by GDF in 1995. It was 'affirmed' in 2001 but has not been re-assessed since 1995.[82]

109. The initial assessment limited the Bond to provision for end of mine-life rehabilitation costs. That was a departure from the prevailing policy which was to require a bond based on an estimate of the worst case liability during the life of the mine. The basis on which the bond was limited was that GDF was to continue progressive rehabilitation "at a similar rate" to the then present program.[83] The difficulty with that approach (viewed as a whole of mine-life proposition) is that the rehabilitation Plan and DSDBI's management of it, has not permitted any real assessment of the rate at which progressive rehabilitation is being undertaken. That problem is well illustrated by the mis-matched expectations of DSDBI and GDF Suez about when rehabilitation is required to be completed or commenced under the 2009 Plan.

110. Significantly, the Bond was not re-assessed in 2001 when the land subject to the mining licence was substantially increased with the result that more land will be disturbed and require rehabilitation.[84]

111. Mr Graham said that the costs to complete rehabilitation would be less than $100,000,000, or about $80-something million.[85]

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[82] Evidence of White

[83] Evidence of White, briefing note dated 4 December 1995 Exhibit KAW49 to the second statement of Kylie White

[84] Evidence of White

[85] Graham, T2265

112. Before GDF gave that evidence Ms White agreed that the Bond was an 'underestimate' and that it was time for a re-assessment.[86]

113. DSDBI has a methodology by which it assesses rehabilitation liability. That methodology could be applied but has not been applied by DSDBI to re-assess the bond.[87]

114. The Minister has a power under s.79A of the MR(DS) Act to require the licence holder to assess its rehabilitation liability and to have that assessment audited. The Minister has not done so.[88]

115. DDSDBI is 'currently undertaking a project to devise a methodology to assess the rehabilitation liability for all mines in Victoria'. The project was commenced in 2010, suspended in 2012 and recommenced late 2013.[89]

116. The evident purpose of requiring a bond is two fold – to provide an incentive to the mine operator to complete rehabilitation and to provide the state (ultimately the taxpayer) with a guarantee that the liability will be met by the mine operator. It is true that if the Minister is required to clean up a site the costs may be recovered as a debt (s.83(4) of the MR(SD)Act). But that outcome would shift the risk of recovery onto the state, requiring it to find assets in the jurisdiction against which to execute any judgment debt. The only guarantee of recovery is the one provided by the Act – namely the power to require a rehabilitation bond for the assessed rehabilitation liability.

117. When asked whether the state of Victoria would be left to pay the bill for the clean-up in the event that GDF does not complete rehabilitation, Mr Graham's evidence was that,

> No, not all, that won't happen. You know, what I would actually say is that all of the processes is a dynamic process in terms of life, the plans, the plans change, life changes. One of the things that I would say, okay, there's a name change, its GDF Suez now. In the Latrobe Valley the ownership of power plant has changed several times since 1996, since privatisation …. We're actually the only organisation that's in here for the long haul; so we're not going anywhere. So in terms of, even if

[86] Evidence of White
[87] Evidence of White
[88] Evidence of White; Graham T2262
[89] First statement of White, [116-117]

there was a view we were going somewhere, then I'm sure there's legal recourse to chase us for that money.

118. Nevertheless, GDF Suez resists the notion that it should be pay an increased bond. Mr Graham did so on the grounds that it was not the purpose of the Bond to cover the full costs of rehabilitation. Mr Graham said that if it was "clarified" that the purpose of the bond was to cover the full cost of rehabilitation and it was "legislated" GDF would comply with that legislation. He said that, "it's not actually a question for me; I don't set the bond; we're not involved in setting the bond, I think we should ask the regulator as to the principle behind the bond and clarify it with them."[90]

119. EV submits that there is no justification for the Minister failing to require a bond that matches GDF's assessed liability for rehabilitation, particularly in circumstances where a large proportion of rehabilitation work will be left to the last 3 years of mine life.

120. The Minister should be prepared to require GDF to back its commitment in words with money.

121. Given the track record of DSDBI (no re-assessment of the Bond since 1995 despite its obvious inadequacy; a late-commenced and halting 'project' to review its methodology and no application of its current methodology to require a review) and the fact that the Minister has not used the mechanism available under s.79A, EV submits that it is appropriate that the Board recommend that the issue of DSDBI's methodology and criteria, be audited by the Auditor General.

Lisa Nichols

Jennifer Trewhella

Counsel for Environment Victoria

[90] Graham, T2266-2267

Environmental Justice Australia

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