

Submission on the project changes to the New Acland Coal Mine – Stage 3 Project

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Healthy planet, **healthy people.**

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Doctors for the Environment Australia

Doctors for the Environment Australia (DEA) is an independent, self-funded, non-Government organisation of medical doctors in all Australian States and Territories. Our members work across all specialties in community, hospital and private practices. We work to prevent and address the diseases - local, national and global - caused by damage to our natural environment. We are a public health voice in the sphere of environmental health with a primary focus on the health harms from pollution and climate change.

Recommendations

It is important that the project changes be rejected because

- Although the proposals for noise reduction (and any requested improvements in air quality) are acceptable, over several years the company has proven incapable of their delivery and the government has failed to monitor and enforce. This situation is bringing disgrace on the Queensland government and affects their standing, and to the community it is bringing suffering and ill health.
- Expansion of this mine in the Surat Basin will further compromise ground water and thereby compromise sustainability of the region.
- Any expansion of this mine is contraindicated by its increase in domestic and export emissions in the face of the growing climate emergency.

Submission

This application needs to read in conjunction with the DEA submission regarding New Acland Coal's (NAC) application for an Associated Water Licence (AWL) for the Acland Stage 3 coal mine expansion.²

Project change- noise

DEA has been aware (Appendix 1- attached) of the noise and dust problem **since 2011** caused by the mine since and has investigated it (Appendix 2- page 7).

We referred to the problem in our submission to **Stage 3 in 2013**.³

Referring to 5.7. Noise and vibration, Pages 50-51

13) *This is yet another environmental responsibility which it seems on evidence submitted to us by the community has been disregarded. Noise pollution in excess of standards, particularly occurring at night, continues and in the view of residents takes a significant toll on the health and wellbeing of children and adults alike. Monitoring needs to be done by an independent authority and costs should be met by the mine. Monitoring should be rigorous, and all breaches and suspected breaches should be fully investigated, and appropriate prosecution, rectification and restitution pursued.*

Yet in May 2017 the Judgement from the Land Court made it clear that nothing had been done to alleviate these health problems.⁴

In relation to Air pollution the Judge said:

"I have no doubt that [residents] have been greatly inconvenienced and impacted by dust produced by the mine and given their evidence, it is quite possible EA limits with respect to dust and particulate matter have been exceeded". [587]

"Evidence from nearby residents ...indicate that dust has been an ongoing issue for them since NAC began its open cut coal mining operations some 15 years ago. In fact, there has been over 100 complaints recorded on NAC's complaint's register regarding dust and another 30 or so dust related complaints to EHP." [580]

And in relation to noise:

"The objectors.....have provided the literal 'truck load' of evidence and material detailing what they say to be unacceptable levels of noise generated by NAC's operation of Stages 1 and 2" [721].

"My independent, considered view on what I have before me is consistent with the evidence given by the objectors that they have actually been treated very poorly by both NAC and the statutory party". [721]

"This demonstrates what I can only call the folly of the regime under the current Environmental Authority

In 2019 information we have received indicates that dust and noise remain a problem and there have been many exceedences of regulatory values.

How can it be that over 8 years this community living in a wealthy health conscious country has continued to suffer these health hazards? It is an indictment on the company and the Queensland government- stated clearly by the Judge.

It would defy logic if any further permission was granted to this company for this would increase the incredulity with which regulation and the Judgement are perceived by other developed countries and which harms the standing of Australia.

We note Coordinator-General's change report — Amendment to stated conditions (noise)

Appendix 2. Amended Stated Conditions

Table D1a – Noise limits (includes construction activities)

The requested dB figures are reasonable. However, they are irrelevant because over many years the company has rarely delivered on existing regulations and the government action to enforce has been absent or at the most a slap on the wrist after transgressions. Further, some actions by the company to secure its needs are unconscionable, for example the implication that supply of coal to the Mater Hospital might be in jeopardy if the extension is not granted.⁵

Water Resources

In the view of DEA, the report by OGIA of Surat basin management area⁶ reveals that the sustainability of the Region is already compromised by current water usage from gas mining.⁷

In this OGIA report the current water usage would have to be increased by a tripling of gas mines and by 5 coal mines including Acland which were not taken into account. Clearly therefore any expansion of the Acland mine must be resisted on the basis of its water needs. In May this year DEA opposed the new water licence.⁸

Regarding “the request to change a condition”.⁹

This is unacceptable. The request is for a maximum of five-year use extension for the existing Jondaryan rail load-out facility (JRLF). The EIS, AEIS and the extensive court hearings were based on the condition that from the first day of operations of stage 3 the new train load-out facility, rail loop and rail spur for the project were required to be the sole distribution point for all railed products. This entailed decommissioning of the JRLF by the first day of Stage 3 operations. Environmental and health implications of this change have not been assessed.

Climate change implications of any condition which facilitate expansion

The recognition by the IPCC of the serious situation of failing greenhouse gas emission mitigation occurred in 2018 since the company planned expansion. This is a new consideration which merits urgent attention by the Queensland government.

Australia has signed and ratified the COP24 Paris Agreement, which aims to limit “the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels”.¹⁰

Indeed, the recent Intergovernmental Panel on Climate Change (IPCC) report demands urgent and deep reductions in greenhouse emissions and shows that if emissions are not in rapid decline by 2030, we have little chance of limiting warming to 1.5°C or even 2°C. Their conclusion is that limiting warming to 1.5°C implies reaching net zero CO₂ emissions globally around 2050.¹⁰

The IPCC reports involve more than a thousand scientific experts reaching consensus and inevitably there are new scientific findings being published even before the next IPCC report is due. Whilst the IPCC is offering warnings on the 2°C temperature rise, an accumulation of findings indicates that in the absence of aggressive action, we are likely heading for an alarming 4°C rise this century.

The reports from the Royal Society in 2011¹¹ and followed in 2013 by a comprehensive report¹² from the Potsdam Institute and World Bank predicted a 4°C rise before the end of this century.

This was confirmed by a study in the Journal Advances in Atmospheric Sciences which estimated there is a 74 percent chance of exceeding a rise of 4°C by the turn of the century.¹³

The latest review of these predictions from David Spratt and Ian Dunlop summarises these 4°C statements from highly esteemed scientific institutions.¹⁴

Climate Analytics has standing in the scientific community. Their July 2019 report indicates Australia's domestic and export fossil fuel emissions are now 5% of global emissions and current developments in NT, WA, Queensland and NSW could increase this 12 to 17% by 2030. On a per capita basis, Australia's carbon footprint, including exports, surpasses China by a factor of 9, the US by a factor of 4 and India by a factor of 37.¹⁵

In Australia, Queensland will be damaged most from climate change progression and it is clearly illogical for Queensland to promote its own demise.

References

¹ <http://www.dsdmip.qld.gov.au/assessments-and-approvals/new-acland-mine-stage-3-project-changes.html>

² <https://www.dea.org.au/wp-content/uploads/2019/05/New-Acland-Coal-NAC-application-for-an-Associated-Water-Licence-AWL-for-the-Acland-Stage-3-coal-mine-expansion-Submission-05-19.pdf>

³ <https://www.dea.org.au/wp-content/uploads/2013/02/New-Acland-Stage-3-Submission-02-13.pdf>

⁴ <https://archive.sclqld.org.au/qjudgment/2017/QLC17-024.pdf>

⁵ <https://www.couriermail.com.au/news/queensland/new-acland-coal-mine-waiting-on-stage-three-approval/news-story/4584cfe960754f304d71941a02441235>

⁶ https://www.dnrme.qld.gov.au/_data/assets/pdf_file/0010/1445554/uwir-2019-report.pdf

⁷ <https://www.dea.org.au/wp-content/uploads/2019/07/Underground-Water-Impact-Report-for-the-Surat-Cumulative-Management-Area-07-19.pdf>

⁸ <https://www.dea.org.au/wp-content/uploads/2019/05/New-Acland-Coal-NAC-application-for-an-Associated-Water-Licence-AWL-for-the-Acland-Stage-3-coal-mine-expansion-Submission-05-19.pdf>

⁹

<http://eisdocs.dsdip.qld.gov.au/New%20Acland%20Coal%20Mine%20Stage%203/Project%20changes/new-acland-coal-mine-stage-2-project-change-aapplication.pdf>

¹⁰ https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_Chapter2_Low_Res.pdf

¹¹ <https://royalsocietypublishing.org/doi/full/10.1098/rsta.2010.0303>

¹² New Report Examines Risks of 4 Degree Hotter World by End of Century [press release]. Washington: World Bank Group 2012. <http://www.worldbank.org/en/news/press-release/2012/11/18/new-report-examines-risks-of-degree-hotter-world-by-end-of-century>

¹³ Wang X, Jiang D, Lang X. Climate Change of 4°C Global Warming above Pre-industrial Levels. *Advances in Atmospheric Sciences*. 2018;35(7):757-70

¹⁴ https://docs.wixstatic.com/ugd/148cb0_a1406e0143ac4c469196d3003bc1e687.pdf

¹⁵

https://d3n8a8pro7vhmx.cloudfront.net/auscon/pages/16166/attachments/original/1562469729/FINAL_Carbon_footprint_report_Formatted.pdf?1562469729

Appendix 1

See attached document

Appendix 2



Observations concerning the Air Quality section of Environmental Impact Statement (Chapter 9)

Five air quality criteria are listed each with an expressed upper value. These are PM₁₀ maximum 24-hourly average (50µg/m³) with 5 allowable exceedances a year, PM_{2.5} maximum 24-hourly average (25µg/m³), PM_{2.5} annual average (8µg/m³), Total Suspended Particulates (TSP) annual average (90µg/m³) and deposited dust which is ascribed a nuisance guideline level of 120mg/m² averaged over a month. All 5 air quality criteria were set by the Department of Environment and Resource Management (DERM)

Of the above criteria only PM₁₀ 24 hourly averages and dust levels have been monitored.

PM_{2.5} measurements were not taken "because dust monitoring around open cut coal mining activities has shown that coarse particles (those greater than 2.5µm) dominate the particulate size distribution (Smith, 2004)" (the author of the reference, P. R. Smith is an employee of the NSW Minerals Council). The assertion appears to rest upon a diagram sourced from the USEPA which shows PM_{2.5} to be dwarfed by PM₁₀ and larger particles in the case of mining and a table from an Australian Coal Association Research Program (ACARP) paper that indicates PM_{2.5} to constitute 4% of TSP and 10% of PM₁₀ in mining situations (no error bars or qualification of the nature of the mining is provided in the Smith's industry supportive review paper.

TSP concentrations were not measured, rather they were "assumed" to be double the PM₁₀ concentration (presumably derived from Smith's review and the above mentioned ACARP reference which showed PM₁₀ as constituting 40% of TSP)!

Air quality monitoring (for dust) was done at 24 separate sites in the vicinity of the mine. The location of all but one of these sites is shown in Figure 9-6 of the EIS. Nine of these sites were private residences. PM₁₀ measurements were made from only 6 of the above sites of which 4 were private residences.

Meteorological information indicated that wind direction was predominantly from the east. It is notable that the majority of the dust monitoring stations and all but one of the PM₁₀ measuring sites were to the east or north east of the mine, upwind when the predominating wind prevailed.

It can be inferred from Figure 9-7 that a total of 76 (24 hourly average) PM₁₀ measurements were made in the period 18/03/03 to 18/09/08. These measurements

were made at from 4 to all 6 of the sites on 16 separate occasions 3 to 8 months apart. Monitoring became less frequent as the mine expanded.

Only 3 PM₁₀ samplings occasions and 15 PM₁₀ measurements were recorded after the opening of Stage 2 of the mine by Premier Anna Bligh on 21 March 2007.

Wind conditions when PM₁₀ samples were taken are not shown. Perhaps they were not recorded!

The reported average 24-hour PM₁₀ concentration of 14µg/m³, the maximum 24-hour average PM₁₀ concentration of 45µg/m³ and the 95th percentile of all 24-hour average PM₁₀ concentrations of 24µg/m³ were derived from the above 76 readings. Calculations based on Figure 9-7 give an average 24-hour PM₁₀ concentration of 17µg/m³ (10 readings) and a maximum 24-hour PM₁₀ concentration of 26µg/m³ from the monitoring site at Jondaryan.

In my opinion PM₁₀ monitoring was inadequate and provides a poor baseline for predictions as to likely conditions if stage 3 proceeds.

Monthly dust deposition rates from 2006 to 2008 at 14 of the 24 measurement sites are reported on page 9-11 as ranging from 29-112mg/m²/day with the claim that DERM's monthly average dust nuisance level was not exceeded. However, Table 9-4 on the following page indicates the range differently at 29-197mg/m²/day indicating that DERM's stated monthly average nuisance threshold of 120 mg/m²/day was exceeded at one of the sites (AD14). Furthermore Table 9-4 showed maximum recorded deposition rates of between 1.09 and 7.9 the nuisance threshold, the averaged maximum from the 14 sites being 2.5 times the threshold nuisance level.

Monthly dust deposition rates from 2006 to 2008 at 3 additional sites close to the Jondaryan rail coal loading facility (JRLF) (situated about 1.5 km east of the town) were similar to the above with one exception this being a site to the east (upwind) of the loading facility which recorded the lowest values of all 17 sites. These findings are shown in Table 9-5

It should be noted that the EIS does not disclose the total durations or actual periods over which dust measurements were made. It should also be noted that stage 2 of the mine did not commence till March 2007.

A further 4 sites, bringing the total to 24, were monitored from 2007 to 2009 (Table 9-6). Data from these sites from the south east, south, southwest and west of the existing mine and proposed expansion are used in the EIS to provide baseline dust deposition data for stage 3 of the project.

Three of these sites recorded very high readings. Average values were 1.9 times the nuisance threshold, with the averaged maximum being 16.2 times the nuisance value.

The authors of the EIS claim these latter high "baseline" values were influenced by agricultural activity. There is however no mention that a chemical analysis of the deposited dust was made to support this claim.

Table 9-7 provides "Adopted background particulate levels" of three "Air Quality Indicators" a 24-hour PM₁₀ of 24ug/m² which is equivalent to the 95th percentile PM₁₀ concentration from 76 readings shown in Figure 9-7, an "Annual average TSP concentration" of 28µg/m³ that was derived by doubling the average PM₁₀ concentration from the same 76 readings shown in Figure 9-7(!) and a "Dust deposition rate" of 49mg/m²/day which is claimed to be the average dust deposition rate from the 14 sites monitored in 2006 to 2008. This value is however different to the dust deposition average value for these sites revealed in Table9-4. The value derived from Table 9-4 is 60.57!

I regard the credibility and relevance of the above values as dubious.

Calculated total PM₁₀ and TSP emissions in 2008, 2025 and 2036 measured in grams/second are provided in Table 9-10. The table adds up the individual dust sources to give total estimates. Examination of the table shows that both total PM₁₀ and total TSP emissions are expected to increase by a factor of 2.5 by 2025 and 3.0 by 2036 over the 2008 emission figures. Further modelling (Ausplume version 6.0 dispersion model) based on the above total PM₁₀ and TSP estimates taking into account local topography, wind conditions etc then give estimates of 24 hourly PM₁₀, annual TSP and annual dust deposition at 22 residences that are in close proximity to proposed mine boundary.

No estimates are provided for the town of Jondaryan which is situated approximately 14.5 km southwest of the existing mine and 9km southwest of the proposed expanded mine.

Table 9-11 "Predicted dust concentrations and deposition rates at nearby sensitive receivers"

modelled air quality estimates at the 22 residences for the year 2008 (presumably in part as a test of the model's validity). Three of the sites that were modelled (Sensitive receivers 2, 3 and 4) corresponded to locations that were monitored for PM₁₀ in 2006-2008 (Monitoring locations AD19, AD4 and AD13). All 3 are to the northeast of the existing mine. Interestingly in all cases the modelled (and presumed to be average) PM₁₀ concentrations were much higher (by factors of 6.6, 5.5 and 4.1) than the averaged readings from the individual sites revealed in Figure 9-7.

Confusingly the next table, Table 9-12, compares observed maximum 24-hour PM₁₀ concentrations with modelled maximum 24-hour PM₁₀ concentrations at the above 3 sites. It is noted that modelled (and presumed to be average) 24-hour PM₁₀ concentration estimates in Table 9-11 are identical to the maximum modelled concentrations presented in Table 9-12! The discrepancy between observed and estimated concentrations at the above 3 sites is reduced to factors of 3.8, 1.9 and 2.2 assuming that maximum values were modelled. Whichever the case it is unclear whether the basis of the discrepancy between observation and model lies predominantly with the representativeness of the readings taken at the sites, with the model's assumptions or a combination of both.

Five of the sites that were modelled for dust deposition (Sensitive receivers 1, 3, 4, 6 and 9) corresponded to locations that were monitored for dust deposition in 2006-2008 (Monitoring locations AD2, AD4, AD11, AD12 and AD13). In all cases the modelled deposition was higher than the observed deposition (by factors of 1.0, 1.5, 1.7, 1.2 and 1.7 respectively). These discrepancies, although smaller than was the case with either interpretation of the PM₁₀ data, suggest that the greater error was associated with the predictive model.

Tables 9-13 and 9-14 are identical in format to 9-11 applying to "Predicted dust concentrations and deposition rates at nearby sensitive receivers" but for the years 2025 and 2036. As was the case with Table 9-11 it is unclear whether the columns headed "24-hour PM₁₀ (µg/m³)" represent average estimates or maximum estimates. Whichever the case on average the PM₁₀ estimates are 1.6 times greater by 2025 (mean 24-hour PM₁₀ 70µg/m³) and 2.5 times greater by 2036 (mean 24-hour PM₁₀ 108µg/m³) than in 2008 (mean 24-hour PM₁₀ 43µg/m³). Note that the maximum acceptable 24-hourly average is set at 50µg/m³ with most of the predicted concentrations at the individual residences being well in excess of this value. No estimates were made for Jondaryan.

Tables 9-13 and 9-14 also list the "Annual TSP (µg/m³)" and "Annual Dust Deposition (mg/m²/day)" predictions for the 22 residences in 2025 and 2036. Mean annual predicted TSP concentrations were 37µg/m³ by 2025 and 46µg/m³ by 2036. With the

exception of estimates for the private residences listed as Sensitive receivers 16 and 17 in 2036 all estimates were below the maximum acceptable concentration of $90\mu\text{g}/\text{m}^3$. Mean predicted annual dust depositions were $64\text{mg}/\text{m}^2/\text{day}$ by 2025 and $78\text{mg}/\text{m}^2/\text{day}$. Again, with the exception of the same 2 residences mentioned above all estimates were below the nuisance value of $120\text{mg}/\text{m}^2$. No estimates were made for Jondaryan.

No predictions were made concerning a likely deterioration in air quality in Jondaryan from the proposed increase in passing coal transport and use of the Jondaryan rail coal loading facility. This is despite the fact that the site which is about 1.5km east of the town will be operative 24 hours a day with up to 8.8 B-quadruple 200 tonne truck loads arriving and unloading per hour in order to accommodate the mines projected 10 Mtpa coal production rate!