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Calga Sand Quarry

19/1/13

Southern Extension

Major Project Application No.06_0278



Response to Rocla's Final Response to Government and Public Submissions:

Firstly, I would like to document my surprise and disappointment that Rocla's respondents have chosen to ignore the evidence based, scientific facts that I presented in my original "Dust" Submission written on behalf of the CPR Community Group. I have therefore attached the submission to this letter (Appendix B) for your review.

Re: AIR QUALITY.

1.1 Baseline Air quality Data.

Rocla states that it is not necessary to monitor for Pm10 as the quarry emissions have a low likelihood of PM10 impacts and that monitoring deposited dust is enough as Pm10 concentration will be in proportion to the amount of surface dust.

-  To use the criteria for air quality monitoring from DA 2004, is no longer acceptable. These criteria, that only required surface dust to be measured, were inadequate at the time and totally outdated now.
-  It is widely accepted that there is little relationship between deposited dust and airborne particles. Whilst TSP contains the finer particles, the particles that relate to health are the PM10 (inhalable) and Pm2.5 (respirable) particles. The processes that produce PM10 and PM2.5 particles tend to be different, and their **levels bear no relation to one another.**¹

All the guidelines refer to monitoring of PM10 and smaller particles and for at least 12 months continuously prior to project submission.

The NEPC has made the Air Quality NEPM review standards, and add an advisory reporting standard for PM2.5. The issue is that “ the current approach to monitoring, focussed on compliance with air quality standards, **is not consistent with international** trends to reduce exposure to these pollutants irrespective of whether the air quality standards are met or not.”²

- ✚ Rocla has monitored for PM10 particles for 14 days in total; in itself this is insufficient and irresponsible.

In addition it was during a rainy period and the monitors were placed largely up wind from the source.

However, Rocla argues that the highest dust recording was on the wettest day. The fact is that on a dry day the airborne dust would have been exponentially more.

- ✚ To present figures of continuous PM10 monitoring for 12 months from **Richmond** (EA pg 5-146) 50Km southwest of the proposed Quarry site is **NOT acceptable!**

This is a vastly different site, where river sand is dredged and washed to produce sand, in Calga friable sandstone is extracted and crushed on site.

The respective “microclimates” are different. Logically the air quality at these sited cannot be presumed to be the same.

The PM10 concentrations at Richmond are significantly higher than the Calga measurements, where given the different mechanisms of obtaining sand, Calga should have higher readings.

This huge discrepancy only highlights the inadequacy of the Calga monitoring that has been done so far. An insult to the intelligence of the local population and a total disregard for our health and welfare.

- ✚ The risks here are unknown as no credible monitoring has been done.

- ✚ Rocla’s environmental assessment is full of misinformation, assumptions and omissions affecting:


- 36 residences within 1km of the proposed quarry, 10 within 500m and 1 at 270m.
- The central coast suburb of Kariong is 6km to the east of the quarry and the prevailing winds are westerly. Kariong is home to 6285 people and 900 children attend the primary schools there. (Census 2006)
- The Walkabout Wild Life Park has around 30 workers, and around 20,000 school children visit the park annually, and their activities will take place about 50m from the proposed mine.
- Somersby is 5km away and home to 1251 people.

1.2 Air Quality Impacts


- ✚ Augmentation of the problem-premature felling and lack of successful rehabilitation:

- EA pg 2-16 states that land will be cleared 6-12 months in advance. This will greatly enhance the dust problem. However in the Statement of Commitments, pg 6-13, 11.1 states that they will minimise clearing ahead of extraction activities. Which will it be?
- Levels of dust from removal of vegetation and top soil and removal of overburden material as well as transport are responsible for major dust emissions.³
- Further important control is keeping disturbed land to a minimum, by progressive rehabilitation.⁴
- **To date in the existing quarry little successful rehabilitation has occurred. So currently exhausted mines remain unsealed.**

2.1 Back ground levels of Silica in Particulates.

 Local surface dust samples were taken and analysed by a private academic institution and presented at the SAG Presentation to Independent Panel-March 2009.

- 4-6 December 2006 at The Walkabout Wildlife Park, 1070m from the existing Rocla Quarry site experienced a thick deposit of dust. The dust samples showed between 50% and 80% Silica less than 10um.⁵
- Dust samples taken from around the Quarry show a predominant amount of particles <2.5um. Dust deposited on the surrounding areas is recirculated by prevailing winds.
- Pit retention is noted to be 5% therefore 95% of dust leaves the site.³
- Rocla states in its 2006 EA for the new Quarry that they predict that they will produce 273494 kg of dust.⁴
- Dust samples from the existing quarry have shown to be 90% crystalline Silica. Dust plumes rise to 400m from the quarry and the highest concentration of PM10 particles are 10-25 m in the air.
- Dust samples from our residence 1.2Km from the existing quarry show 80% crystalline silica with particle sizes of less than 10um.

 The Victorian EPA has developed a protocol for a **PM2.5 3ug/m3 limit for crystalline silica in areas surrounding mines and extractive industries.**

NO ONE CAN ESTIMATE the true emissions impacting the residents in the area surrounding the Rocla mine without any form of monitoring for these particle sizes, let alone the current world standard requirements for continuous monitoring.

Rocla states *that in the case of the Somersby Fields project the Panel was confident that the concentrations of airborne silica would remain far below internationally acceptable criteria in the area....including Somersby Public School.*

 This project was **refused** by Minister Kristina Keneally on the grounds:

“The potential benefits do not outweigh the social and environmental consequences.”
And unacceptable reliance on management / monitoring to ensure safe operations.

Finally the Executive Summary for the original CPR Air Quality submission 2010, remains the core of the issue:

“The purpose of this submission is to demonstrate that Rocla Mine has not been diligent in monitoring for airborne small size particulate matter. These small inhalable and respirable particles are relative to Silicosis and silica related disease. There are a significant number of people that may be affected by the inhalation of these particles in the affected jurisdiction.

The Calga Peats Ridge Community Group’s objective is to ensure the safety of the Calga, Kariong and Somersby communities. We seek government assistance to ensure that proper dust inhalation data is collected and monitored by an independent commission or government agency to ensure that the community safety against life threatening silicosis , silica related diseases and dust related asthma.”

Yours Sincerely

Dr Terri Thomson

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Referances:

- 1-Dr Van Steenis, Visit to the Hunter Valley: Urgent Reform of Coal Industry operating standards.2009
- 2- NEPC Ambient Air Quality NEPM.
- 3- Environmental Defender’s Office. (NSW) Technical fact sheet Air Quality- Dust Monitoring.
- 4- www.health.nsw.gov.au: Environmental health; Mine dust and you.
- 5- SAG Power point Presentation to Independent Panel March 2009.

Appendix A:

Extract-Dr Dick Van Steenis: Urgent reform of Coal Industry operating standards.

Dust problems, PM10 and PM2.5 – SIZE IS IMPORTANT

Open cut mining produces dust particles at several stages in production. **Both the size of the**

particle and the content are critical to causing health damage.

For dust to enter lung tissue it must be less than 3microns in diameter. Larger coarse particles breathed in will get caught in the hairs and mucous of the nose and bronchi.

The convention is to describe coarse dust particles between the size of 10microns and 4 microns as PM10. Fine dust particles are conventionally measured as PM2.5.

(A human hair is about 100microns in diameter). Whilst even much smaller ultra fine particles are produced in large numbers they are probably too small to cause major health effects.

It is PM2.5 and PM1 particles that are the critical ones for human health. PM10 particles cause nuisance effects of dirtying all surfaces and if they get into the water supply such as rainwater tanks their toxins will be dissolved and can then produce health effects. The processes that produce PM2.5 tend to be different to the processes that produce PM10 and their levels bear no relation to one another.

This fact is critical to understanding the deadly uselessness of the Australian dust monitoring system which is all built around measuring PM10 levels – **there is no standard for PM2.5, and it is not measured or reported.**

World-wide PM2.5 legislation

USA commenced legislation for PM2.5 levels in 1997 and they have noted a 6% reduction in mortality rates and a reduction in the associated health bill. Canada, Japan and France have followed suit. In contrast, in other polluting countries such as Australia the mortality rates and health expenses are rising.

Appendix B:

Dust submission Jan 2010-CPR Community Group Inc.