

**INQUIRY INTO PERFORMANCE OF THE NSW
ENVIRONMENT PROTECTION AUTHORITY**

Name: Name suppressed

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Partially Confidential

Submission to Parliamentary Inquiry No. 5

Over the past year, I have been involved in a major community campaign to seek improvement to the operations at **White Bay cruise ship terminal – to reduce air and noise pollution and to resolve the health risks to which our community is being exposed.**

I was involved in the significant prior Council and community campaign in 2009 and 2010 through until 2012 which opposed the location of the cruise ship terminal at White Bay. At the time, at public meetings, I shared information about the health symptoms I experienced following the impromptu arrival of cruise ships at Wharfs 5 & 4 in February, 2009 and expressed my concerns regarding the potential public health risks related to the planned Cruise Ship Operations.

The **major concerns and risks were not addressed** and a distressing situation now exists for me and all Balmain residents who suffer the health consequences of exposure to toxic air pollutants and constant, intrusive, irritating noise which significantly exceeds safe limits, for prolonged durations and frequently.

Implementation of any satisfactory solutions to address the issues is not in sight, despite our efforts and the global evidence of solutions implemented in other major US and EU Ports. I.e., almost 17 months after operations commenced at White Bay Cruise Terminal (WBCT) with the arrival of cruise ship, Pacific Pearl on April 15th, 2013.

I understand EPA's advice to ensure our safety was not included and Public Health Department were not involved in the WBCT Planning process.

A continuing public concern is that the EPA, as the environmental protection authority, was unable to insist upon the provision of shore power at the White Bay terminal, especially when the location of the terminal is in a high density residential area. The EPA has since failed to adequately regulate to prevent the serious health impacts and loss of amenity for our community which is adjacent to the terminal.

Air Quality

Current Air Quality Criterion and Standards against which air quality is measured are inadequate when compared to World Health Organisation (WHO) Guidelines. E.g., Sulphur dioxide (SO₂), OEH Standard is 11.4 times higher than WHO Guidelines. Only two air pollutants of the range of relevant toxic pollutants are measured.

[Ref. Air Quality and Health: WHO_NEPM, OEH Pollutants Standards. K. Cox]

I note the interpretation and explanation of the data in the PANSW Air Quality Monitoring Reports is flawed. E.g., "No ships" is quoted when in fact other Bulk Carrier Ships / (or Naval ships) have been in Port. Some relevant data points are excluded. I observe selective inclusion of monitoring data points related to the duration of ship stays.

The conclusions drawn by PANSW and frequently stated in relation to PM₁₀ comparative results based on the Randwick and Rozelle AQMS measurements are uncertain.

- Round 3 of the White Bay air quality monitoring, February and March 2014, i.e., peak period, showed that on **all 20 days of this monitoring period, the 24-hour average sulphur dioxide measurement exceeded the levels recommended by the World Health Organisation.**
- **The Balmain community is exposed to air pollution for 10 hours or more a day. The overnight and cruise ship long stays; in particular, impacts on air quality are visually obvious and odour is offensive, causing nausea. Overnight cruise ship stays are a serious concern as there are no regulations or controls in place.** Monitoring of activities or investigation of reported events is not conducted.

Air Quality - continued

I have observed under the *cover of darkness some cruise ship Captains do as they please, running engines at full capacity causing the associated rapid increase in output of black plumes of toxic emissions.*

At night there are no limitations and we suffer the symptoms of toxic air quality, forced confinement within our homes and sleep deprivation due to the breaches of maximum noise limits.

NB: Odour on occasions has suggested refuse has been burnt on board cruise ships.

- **The known increased risk factors of being “at the source” and duration/ length of time of exposure are highly relevant in relation to health outcomes for residents in close proximity to the terminal.**

[Ref. NEPM Setting Air Quality Standards: Health Assessment documentation.]

Senate - “Impacts on health of air quality in Australia” 2.13].

- Cruise ships **run their engines all day and overnight sometimes for three or more days and nights continuously**. E.g. “Costa Neo Romantica” 3 nights and “The World” for 6 nights. On both of these occasions there were two cruise ships in Port at the same time, several times. I.e., double the load of toxic pollutants in the air that we are breathing for prolonged periods. The ships smoke-stacks are at the same height as our homes. **The fumes, fine dust/ soot accumulate and carcinogenic particulate matter, PM10 and PM2.5** (also Ultra Fine PM Particles - ‘UFPs’) **infiltrates inside our homes, our nasal passages and lungs.**

NB: “Significant exposure to outdoor pollution can also occur due to outdoor air infiltrating indoors”. For some pollutants (e.g., PM10, carbon monoxide and PM2.5), it has been estimated that about 90% of outdoor air infiltrates indoors”. (USEPA, 2009: 25 CSIRO, 2006).

- The number of cruise ship arrivals has been far greater than was originally proposed in the first year. We were told 60 to 70 cruise ships would berth at White Bay. Over the first year, it was more than double this number with at least 133 days with cruise ships in port.
- I suffer significant health symptoms associated with the arrival of cruise ships which are exacerbated by the frequency and duration of stay of cruise ships. I experience acute symptoms routinely and chronic conditions have now developed requiring investigations by my GP, ENT and other Medical Specialists.
- **The regulations and controls are inadequate to protect human health.**

[Note: In some countries, ships are prohibited from using this low grade fuel within 200 miles of shore. The fuels being used are amongst the worst in the developed world].

The sulphur content of the fuel is up to 35 times higher than allowed in Europe and North America. Cruise ships in Sydney Harbour burn fuel with a sulphur content of up to 3.5%. In North America, once ships are within 200 nautical miles of the coastline, they are not allowed to burn more than 1% sulphur fuel and this will reduce to 0.1% sulphur by January 2015. In Europe, ships in port are limited to 0.1% sulphur fuel.

Emissions monitoring criteria is inadequate. It is well known that diesel emissions are carcinogenic and contain dangerous toxins: sulphur dioxide, nitrogen oxides, particulate matter (both PM10 and the finer and more deadly PM2.5), benzene, toluene and formaldehyde. Yet, monitoring of the White Bay Cruise Terminal measures only two toxins – sulphur dioxide and PM10. It ignores the other dangerous emissions.]

Noise

Noise from cruise ships should be regulated, controlled, and managed by an independent government authority (such as EPA). The impact on residents from noise and vibrations is a cause of great disturbance. There appears to be no penalties for these ongoing noise breaches.

Recent new WHO Noise Guideline set night time noise limits at 40dBA.

[<http://ec.europa.eu/environment/integration/research/newsalert/pdf/202na3.pdf>]

WHO documentation outlines well known and significant health risks related to excessive noise exposure beyond maximum limits. "NSW Industrial Noise Regulations" quote WHO in relation to noise and the impacts it can have on well-being and quality of life.

The **PANSW Operational Noise Management Plan** maximum noise limits defined look falsely high when compared to pre-cruise ship operations historical data measures. An Environmental Consultant has **noted the inadequacies of the baseline monitoring framework and the scope of the types of measuring and monitoring conducted**.

- **NB**: The **Cruise Ship operations currently breach the Planning requirements, continually impacting our health and well-being significantly. Affecting productivity substantially.**
- Our local community's calibrated monitoring system demonstrates nearly all cruise ships which visit White Bay exceed the noise limits in all time periods, by a health impactful margin. E.g. Ships in the Princess fleet record greater than 67dBA -74dBA throughout the period at berth at Wharf 5 and as high as **107dBA** for some ships is documented.

[NB: WHO recent night time Guidelines recommends noise limits set at 40dBA].

- The cruise ships' engines noise intrusion is disruptive, irritating and debilitating. As are the sirens, alarms, bells, whistles, safety drills, public address system announcements and prolonged departure horn blowing by some ships. I note the _____ in particular, as a serial offender and also the music and disco parties. The **only means of reprieve is departure from your home and the area. This is not practical or viable from a cost perspective when the peak cruise season runs from October, 2014 to March 2015, this year into the next year.**
- WBCT cruise ship noise affects a large proportion of Balmain population as many people either conduct business in the vicinity, work from home, are retired or elderly, and there is a high proportion of parents at home caring for babies and young children. The daily impacts are considerable. Worse when ships stay overnight and for extended days.

Sleep deprivation for the employed and school children is a big issue. A wide ranging area of the population is exposed to the noise breaches. All night light spill from the WBCT after ships' departures doesn't help.

- **Many people are close to the source of pollution and noise so exposed all day, every day ships are in Port.**

Amenity

Cruise Ship activities have an enormous impact on our local environment and expose us to continuing health risks. We are not safe or secure in our own homes. We feel stressed under constant threat from cruise ship operations.

- We are no longer able to enjoy spring and summer. Normal socialising with friends and family within our homes when a cruise ship is in Port is not an option. We cannot even

open doors and windows for fresh air as the air is foul with strong fumes stench, laden with dangerous, toxic pollutants.

- It has a highly disruptive effect on the way we live our lives. My life now revolves around the Cruise Ship Schedule in an attempt to avoid the constant disruptions, and exposure to pollution and noise impacts with the aim to minimize the associated physical health symptoms I experience, aligned with cruise ship arrivals.
- I suggest decision/ policy makers' walk and sleep a day 'in our shoes' on a weekend and experience the impacts and torment of the Dawn Princess at 60 -74 dBA or the Seabourn Odyssey or Costa Neo Romantica for two to three days to experience the overnight realities of noise impacts and breathe in the poor air quality we have to endure.
- **Our environment is causing us distress, reduced well-being and adverse health problems.**

The long peak cruise ship season makes living in my home untenable in the short term. Implementation of solutions which have been demonstrated to be successful in other high profile Ports is needed urgently.

Conclusion

The impacts of cruise ships operations on our health, productivity and well-being is significant and costly. The *impetus to act now* is to reduce the adverse health consequences of our exposure to the documented health risks. **PM2.5** in particular, is currently not measured or monitored in our local environment. **The implications and associated costs related to potential health outcomes are documented. Implement solutions now to reduce the related increase in morbidity and mortality.**

- **Capitalise on the knowledge and experience of others** to *expedite* implementation of solutions now to reduce current health events and the longer term implications of exposure to known health risks. Leverage the global experience of other Ports to facilitate efficiencies and effective strategies.

I refer to the **Executive Summary** Pgs. x & xi. I.e., **Emission Reduction Strategy**.

"The Clean Air Action Plan" developed by Ports of Los Angeles and Long Beach California can usefully inform a general strategy for emissions improvements at NSW Ports. This plan established a strategy for reducing health risks..." "Importantly, all port stakeholders contributed to the plan's development. Applying a similar co-ordinated approach for NSW Ports would help establish priorities in terms of port-wide contributions to off-site impacts."

[Ref. "Potential Measures for Air Emissions from NSW Ports. Preliminary Study". Prepared for the NSW Office of Environment & Heritage" PAE HOLMES. 23 June. **2011**. **APPENDIX E: Options Evaluation Matrix**. Pgs. 99 & 100

Studies conducted identify the opportunities and options to effect change in relation to diesel emissions, air quality and noise mitigation.

- **Regulations and controls** are required. Measurement and monitoring with stringent standards in place is necessary for the safety, security and health of the population. Include penalties for breaches of standards.
- **Communication is a priority to engage the Cruise Ship Industry as partners to foster shared responsibility in effecting change towards air quality and noise operational goals. I.e., Industry and Government *working together* to achieve defined goals to reduce emissions.**

[E.g., Ref. Ports of Los Angeles. Press Releases]

Note:

[“...latest scientific evidence confirms that PM2.5 is responsible for significant negative effects on human health, and thus leads to substantial loss of life...” “Further, there is no identifiable threshold below which particulate matter would not pose a risk to human health. Because of this evidence, it is vital to regulate fine particulate matter differently from some other air pollutants. The Commission considers that the proposed effective and proportional approach – namely reduction of the average annual urban background concentration of PM2.5 – is justified”.

[Ozone and airborne particulate matter can affect human health 28].

“They are responsible for several hundred thousand premature deaths every year. They also cause thousands of additional hospital admissions and millions of days every year where individuals have to restrict their activities. These health impacts are caused by both long-term (chronic) and short-term (acute) exposure, resulting in both mortality (death) and morbidity (illness). The “Systematic Review of Health Aspects of Air Pollution in Europe” carried out by WHO 29 revealed significant impacts of exposure to particulate matter and ozone even at low concentrations. Indeed, no safe level for effects has currently been identified for either of these pollutants”.³⁰

“Human toll for poor air quality is worse than for road traffic accidents, making it the number one environmental cause of premature death in the EU. It also impacts the quality of life due to asthma or respiratory problems. Air pollution causes lost working days, and high healthcare costs, with vulnerable groups such as children, asthmatics and the elderly the worst affected. It damages ecosystems through excess nitrogen pollution (eutrophication) and acid rain. The direct costs to society from air pollution, including damage to crops and buildings, amount to about €23 billion per year, and the external costs from health impacts alone are estimated at € 330-940 billion (3-9% of EU GDP)”.]

Benefits and costs of regulating PM2.5 at EU level

“The benefits of the Commission’s proposal to require a reduction of the average urban background concentration, between 2010 and 2020, between €37 billion and €119 billion per annum in 2020. These are between seven and 24 times higher than the estimated costs of between €5 and €8 billion per annum”.

[53 The methodology for the morbidity effects is described in more detail in Volume 2 of the Methodology for the Cost-Benefit Analysis of the CAFE Programme (AEAT, March 2005)]

Other Key Issues:

1. Approval of large scale, intensive and polluting industries within high density residential communities is fundamentally wrong and represents the worst possible planning outcome. It places the health and amenity of these communities at great risk.
2. Approval of activities which are allowed to cause pollution impacts for the entire time that they operate – within residential communities – is indefensible.
3. State and Commonwealth Governments must act together to regulate and control air and noise pollution from cruise ships especially within high density residential environments.
4. Shore-to-ship power must be provided at White Bay. Over 100 ports around the world now provide the ability for ships to use shore power so that they can switch off their engines. This greatly reduces dangerous diesel emissions in port.
5. No overnight stay of ships should be allowed at White Bay.
6. No more than one ship should stay at White Bay at a time.
7. Greater accountability and response by the cruise ship industry is needed and effective regulatory control of cruise ship operations by Government agencies, in particular the EPA, is needed.
8. Government should find an alternative location for cruise ships, away from White Bay, which will be more compatible with the way that this industry operates and will ensure that the significant impacts of the industry on communities is minimised.
9. Ship arrivals should not occur before 6.30am. (An appropriate time should be canvassed with local residents.) Noise disruption and sleep disturbance from cruise ships has occurred before 5.00am.
10. White Bay should be designated a 'quiet port' given its highly sensitive proximity to the high density residential community. Operations which require noise should be conducted away from White Bay. Testing of alarms, announcements, blasts of the ship funnel and other major sources of noise from the cruise ships have an enormous impact on households.
11. There is a lack of consistency in regulation and compliance across industries. The cruise ship industry is able to pollute the environment and present health risks that would result in any other operators being closely monitored or even closed down until the situation is resolved.
12. Residential communities should not have to face the prospect or threat of 24/7 operations – such as the cruise ship terminal as well as all other proposed uses along White Bay – which are virtually unregulated and allow major impacts of air and noise pollution, loss of amenity, and increased traffic on an entire community of thousands of residents.
13. Government agencies which have responsibility for environmental protection should utilise historical information to assist their work. The adverse impact of 24/7 working harbour on the health of residents and on the quality of the local environment in Balmain is well known and well recorded and should not be repeated.

References: Links: Note:

Air Quality and Health: WHO_NEPM, OEH Pollutants Standards. K. Cox]

NEPM Setting Air Quality Standards: Health Assessment documentation.

Senate - "Impacts on health of air quality in Australia" 2.13

Ref. "Potential Measures for Air Emissions from NSW Ports. Preliminary Study". Prepared for the NSW Office of Environment & Heritage" PAE HOLMES. 23 June. **2011.**

Executive Summary Pgs. x & xi. I.e., **Emission Reduction Strategy**

APPENDIX E: Options Evaluation Matrix. Pgs. 99 & 100

http://ec.europa.eu/atoz_en.htm >

http://ec.europa.eu/health/healthy_environments/portal/index_en.htm

http://ec.europa.eu/environment/air/index_en.htm

Human toll for poor air quality is worse than for road traffic accidents, making it the number one environmental cause of premature death in the EU. It also impacts the quality of life due to asthma or respiratory problems. Air pollution causes lost working days, and high healthcare costs, with vulnerable groups such as children, asthmatics and the elderly the worst affected. It damages ecosystems through excess nitrogen pollution (eutrophication) and acid rain. The direct costs to society from air pollution, including damage to crops and buildings, amount to about €23 billion per year, and the external costs from health impacts alone are estimated at € 330-940 billion (3-9% of EU GDP).

<http://ec.europa.eu/environment/air/transport/index.htm> Transport & Environment

<http://ec.europa.eu/environment/air/transport/ships.htm> Transport & Ships

Air pollutants emissions from maritime transport can be transported over long distances and thus increasingly contribute to air quality problems in the EU. The Thematic Strategy on air pollution from 2005 concluded that sulphur emissions from shipping were forecast to exceed those from all land-based sources in the EU by 2020 (Source: Clean Air for Europe impact assessment, p31, 2005). Further action is therefore needed to improve human health and the environment.

http://ec.europa.eu/environment/archives/cafe/pdf/ia_report_en050921_final.pdf

[Ozone and airborne particulate matter can affect human health 28. Scientific evidence exists also concerning health effects caused by nitrates, sulphates and ammonia as aerosols. These effects however are significantly smaller (results of ExternE projects). In addition, for the purpose of CAFÉ, those effects are considered that are explicitly recognized by international bodies such as WHO].

29 http://www.euro.who.int/eprise/main/WHO/Progs/AIQ/Activities/20020530_1

30 Given that there is a finite background concentration of ozone, the analyses presented here are only based upon situations where 8-hour mean ozone concentrations exceed 35 parts per billion (ppb), which corresponds to an ozone equivalent concentration of 70 micrograms per cubic metre (µg/m³).

[53 For example, the exposure-response functions for the most influential endpoints are based on a few studies, mostly in the USA. They build on structured interviews about occurrence of symptoms and days when activity is restricted by health, whereas mortality is a definite end-point; and there are limited data on background rates in Europe. On the other hand, these are endpoints which are expected to be affected by PM. They have been included in many other major cost-benefit analysis of air pollution, including by the US EPA. The WHO-UNECE Task Force on Health considers that the morbidity evaluations for CAFÉ CBA are a significant step forward and should be included, with due regard to the uncertainties. The methodology for the morbidity effects is described in more detail in Volume 2 of the Methodology for the Cost-Benefit Analysis of the CAFÉ Programme (AEAT, March 2005)]

http://ec.europa.eu/environment/air/pdf/marine_faq.pdf - Re: Frequently asked question. EU SOx Emission Control Areas.