

STOCKTON COMMUNITY ACTION GROUP
SUBMISSION
T4 DEVELOPMENT



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This is a submission from the Stockton Community Action Group (SCAG) objecting to the proposed Port Waratah Coal Services (PWCS) Terminal 4 development in Newcastle.

PWCS's *Response to Submissions and Preferred Project Report (RS/PPR)* does not adequately address the issues raised by submissions to the Environmental Assessment (EA). The T4 project will have significant and unacceptable impacts. We therefore object to the fourth Newcastle coal terminal (T4) being approved and built. These unacceptable impacts and their direct impact on the Stockton community are outlined in this submission.

The following measures should be required for PWCS existing coal operations on Kooragang Island and any new operations such as T4 project:

- Coverings for the coal whilst it is being transported
- Banning of loading activities (reclaiming from stockpiles) during strong dry W to NW winds
- Simultaneous spraying of all coal piles at once in strong wind conditions. For Stockton they include any wind from the westerly direction.
- Installation of wind fences around the coal piles or location of stockpiles inside buildings as occurs at a number overseas locations where stockpiles are close to communities (as at Kooragang Island)
- The installation of continuous PM2.5 and PM 10 particle monitors around the stockpiles and on Stockton with ability to analyse particles to determine their origin. This would dictate the shutting down of reclaiming operations on windy days when set PM10 and PM2.5 limits are exceeded based on NEPM standards

The T4 expansion will increase coal dust issues that are currently being experienced by the community in Stockton. Such coal dust exposure shouldn't be experienced by communities. While increased coal dust prevention measures will increase the project cost it will make a significant difference to the exposure of communities to coal dust and possible health effects.

The T4 project will increase health risks and aesthetic issues in communities surrounding the coal loader due to exposure and deposition of coal dust. This is most evident at Stockton during strong winds from the W to NW direction blowing coal dust from the open and unprotected coal stockpiles.

Impacts on Air Quality

PWCS operates two coal-loaders at Carrington and Kooragang Island. The Terminal 4 (T4) project Port Waratah Coal Services (PWCS) proposed for Kooragang Island would allow for an extra 70 million tonnes of coal to be exported through the Port of Newcastle. Locally, the fourth coal terminal project would see many more coal trains through Newcastle and Maitland increasing dust related health problems such as asthma and other respiratory ailments.

The predominant winds for the Stockton area on an annual basis are from the West North West direction. These winds will see the coal dust from the new terminal being distributed over Stockton. Stockton residents already suffer from coal dust from existing open stockpiles and they should be seeing upgrades to managing coal dust from existing stockpiles rather than adding to the coal dust levels.

The new stockpiles proposed for T4 project will be using similar dust control measures as the existing coal stockpiles on Kooragang Island thereby adding to the dust burden rather than improving it for residents of Stockton. We would be expecting the proposed new coal terminal to be using best available technologies (BAT) to control dust however it is the business as usual approach proposed for the new terminal by PWCS creating coal dust problems as shown in Figure 1.



**Figure 1: Coal Dust - Kooragang Island Coal Stockpiles 17 October 2013
PM10 24 hr reading at Stockton Air Quality Monitoring Station for 17 October
74 $\mu\text{g}/\text{m}^3$**

There has been an air quality monitoring station installed at Stockton following Orica's hexavalent chromium leak and this station includes PM2.5 and PM10 continuous monitors. The station was installed in late October 2012 and was designed and constructed as per the EPA requirements for an air quality monitoring station similar to the Upper Hunter monitoring stations. Data from this station has been available publicly since October 2012 however not used in the T4 modelling and assessment.

Results from the Stockton monitoring station have shown 25 failures of the NEPM PM10 24 hour average standard of $50\mu\text{g}/\text{m}^3$ in the last 12 months of operation significantly above the 5 failures allowed for natural events. PM10 is the particle size range that coal dust particles fall into and is a particle size that has significant health effects on the community. While some of these exceedances will be attributable to salt from onshore winds during storm events a significant number are associated with dry W to NW winds coming across Kooragang Island. Approximately 13 of the 25 exceedances are related to W to NW winds coming from Kooragang Island, 5 are related to bushfires and the remaining 7 with onshore winds and high seas bring salt. An example of the graph of PM10 24 hour average values from the Stockton station is shown for October 2013 with 9 exceedances of the NEPM standard, (the last 4 associated with the recent bush fires the remaining 5 due to strong W to NW winds). Data was missing for the 14, 15 and 18 of October and it is likely there could have been another 1 to 3 exceedances for October if this data was available for the monitoring station.

This data freely available contradicts the RS/PPR which state "*24 hour average PM10 levels of $50\mu\text{g}/\text{m}^3$ are infrequently exceeded in the region*". This statement is **clearly incorrect** when analysing the last 12 months of PM10 continuous monitoring data from the Stockton monitoring station where there have been 25 exceedances, 13 associated with W to NW winds from Kooragang Island.

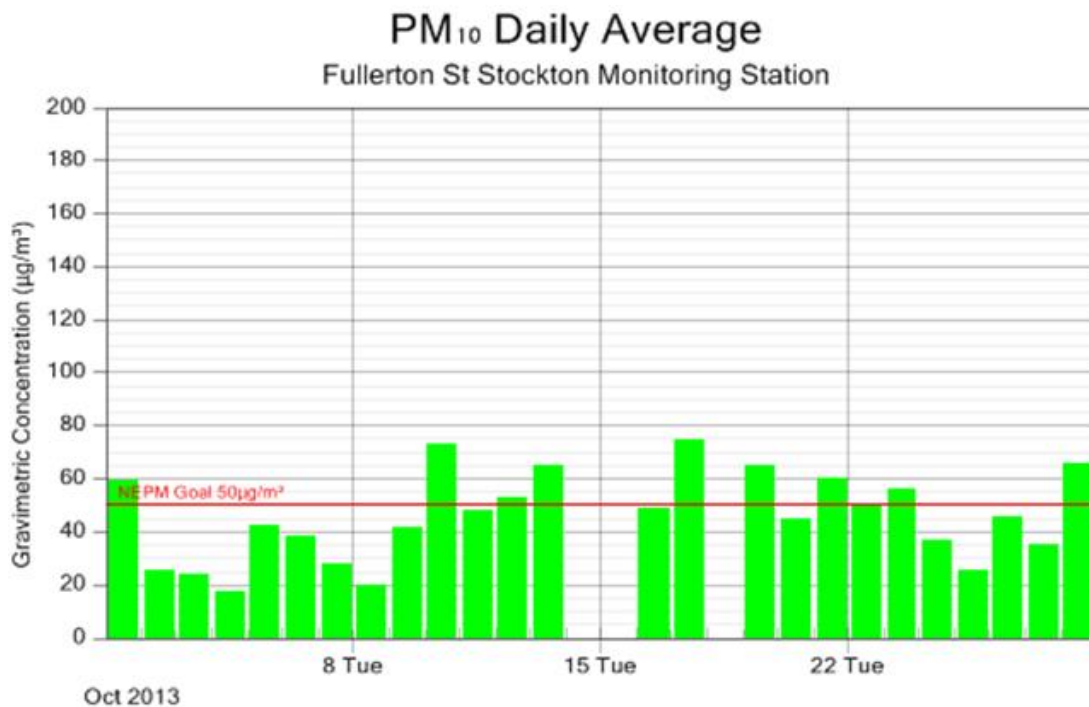


Figure 2: PM10 24 hour Values and Exceedances for October 2013 – Stockton Monitoring

Station

In analyzing PM₁₀ data from the Newcastle, Wallsend and Beresfield monitoring stations during W to NW winds the PM₁₀ exceedances are much lower or nil compared to Stockton. It can also be seen that the PM₁₀ levels increase as the air mass passes over Kooragang Island picking up significant levels of PM₁₀ particles typically 5 to 20 µg/m³ and leading to 24 hour average levels over 80 µg/m³ (Figure 3) and 1 hour PM₁₀ levels over 200 µg/m³.

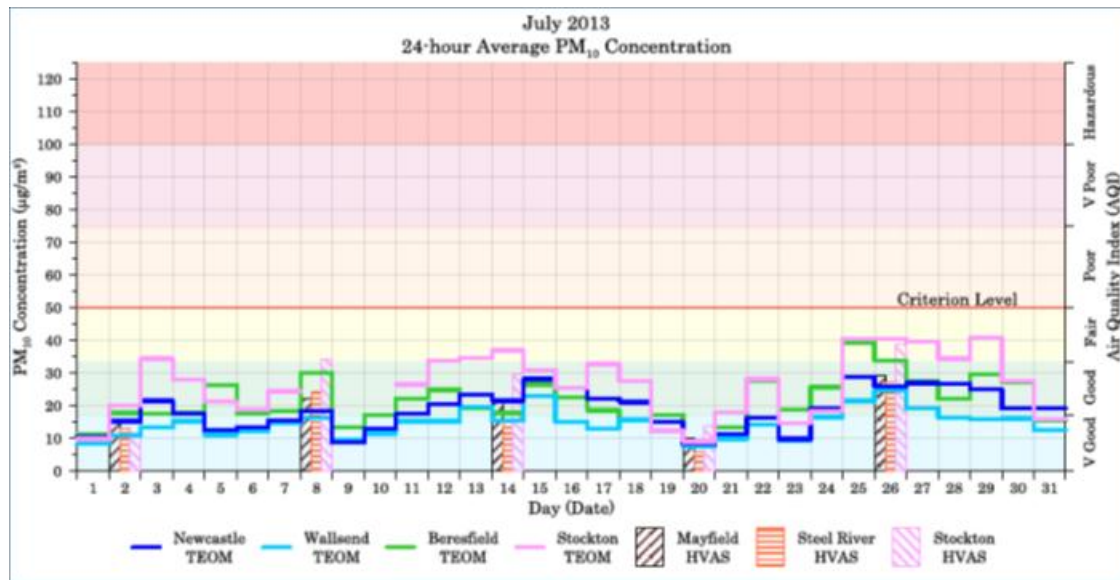


Figure 7-1: Lower Hunter 24-hour average PM₁₀ levels - July 2013

All data recorded at the Lower Hunter monitoring sites were below the 24-hour average PM₁₀ criterion level of 50 µg/m³ in July 2013. PM₁₀ levels were very good or good at all locations except Fullerton St Stockton which recorded fair levels approximately 30% of the time, and Beresfield which recorded fair levels on two days.

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Figure 3: PM₁₀ Levels showing higher levels in Stockton compared to Newcastle and Wallsend in WNW winds for July 2013 – NCCCE Monthly Air Quality Report – Todoroski Air Sciences

The Newcastle, Wallsend and Beresfield continuous PM₁₀ monitors were used for the air quality modeling for T4 giving incorrect assessment of increased exceedances and particle levels at Stockton (Figure 3). Results from the Stockton continuous monitors compared to HVAS monitors measuring PM₁₀ levels every 6 days clearly show the inadequacy of data from these HVAS monitors missing key data from high PM₁₀ days and under assessing the level of PM₁₀ particles at Stockton. HVAS monitors are seen as inadequate by air quality experts and they should not be used for rigorous assessment of particle levels and for effectiveness of dust control measures at coal stockpile operations and compliance. Rather continuous TEOM monitors should be employed at appropriate locations.

Further the RT/PPR air quality modelling continues to use 2010 as a base year. The submission to the T4 EA by NSW Health suggested that the EA should have included “a justification for assuming the PM₁₀ levels in 2010 would be a realistic baseline for modelling future particulate levels or alternatively use, as a baseline, average levels over a longer period of time”. This recommendation is ignored in the RT/PPR with 2010 continuing to be used as the baseline year for modeling work. During 2010 only one

daily PM10 exceedance occurred and only one day did PM10 levels exceed 45ug/m³. In 2012, PM10 levels exceeded 45ug/m³ nine times (one of these was over 50ug/m³) and at Stockton in 12 months starting November 2012 PM10 levels were exceeded 25 times at the Stockton monitor.

Such high PM10 levels create a major concern in the Stockton community with health effects including asthma and respiratory problems. Another major concern is the deposition of coal dust particles in the garden and the health issues from small children ingesting soil containing coal dust.

Indeed, complaints from people in Stockton show it is clear when strong W and NW winds blow the amount of coal dust falling on buildings, swimming pools and other facilities is significant. For pool owners this means the need for major clean-up from the pool during days of strong W to NW winds to remove significant amounts of black dust from the pool. Many residents also hose down the house after such days again to remove black dust. This creates a concern for our health as this is indicative of coal dust in the air that we are breathing as well as the aesthetic issues from the settling dust. Residents should not have to put up with these aesthetic problems and time and expense in cleaning up their properties let alone the major concern about health issues.

It is undeniable that further uncovered stockpiles with business as usual dust control measures will lead to more exceedances of the NEPM PM10 standard of 50µg/m³ especially given the large number of days that PM10 levels are in the 40 to 50µg/m³ range at the Stockton monitoring station. This is not acceptable to the Stockton residents and clearly is in contradiction to the NEPM PM0 standard where PM10 exceedances for 24 hr average should not exceed 50µg/m³ more than 5 times per year.

The T4 project should have a requirement to install PM2.5, PM 10 and ASP analysers for particle analysis in suburbs surrounding Kooragang Island with correlation to wind direction and available on PWCS or EPA website for community access 24/7.

The current PWCS practice to reduce coal dust from the coal piles is to spray the coal piles with water using weather monitoring and stockpile condition monitoring to assess the frequency. This is carried out continuously during the worst weather conditions however the continuous spraying is on the basis of spraying only one or two coal stockpiles then moving onto others rather than all stockpiles simultaneously. There are also currently no wind fences in place. Wind fences and buildings covering coal stockpiles currently exist in Europe, Asia and the US when stockpiles are located near communities with the intention of reducing or eliminating coal dust emissions. Indeed a proposed new coal terminal in WA includes buildings to cover stockpiles as outline below.

Bunbury Coal Terminal Proposal Western Australia Coal Dust Control Strategy (from EPA Report on the proposal)

“The proponent proposes to implement world’s best management technologies at the site to assist in minimising fugitive dust emissions. Best management technologies proposed by the proponent include:

- Coal stockpiles will be fully enclosed in a steel frame and clad building (large shed) and dust emissions shall be minimised through the use of a dust suppression spray water

system with provision for negative pressurisation and dust extraction. It is considered best practice within Australia to cover coal stockpiles.

- Conveyors will be enclosed, with provision for controlled wash-down of spillage.
- Transfer points will be fully enclosed and fitted with misting sprays to suppress dust emissions at transfer points and dust extraction of conveyors at transfer points will use local ducted bag filters to collect any remaining airborne dust.
- The ship loading facility will be fitted with a fully enclosed boom conveyor, a washdown system and a telescopic spout with misting sprays designed to minimise the drop height of material into the holds of vessels.
- Rail wagons will be covered to minimise fugitive emissions.

Advice from the DEC (now DER) confirms that it is unlikely that zero air emissions of coal dust from the site will be achieved. However, the EPA supports the proponent's implementation of best management technologies to ensure the dust emissions are reduced to as low as reasonably practicable. When compared to other coal export facilities around Australia, these technologies represent best practice for coal export facilities in Australia."

Examples of Buildings Covering Coal Stockpiles

PWCS assertion that large buildings cannot be built over coal stockpiles and that there are no examples worldwide is clearly incorrect. An investigation into such structures if undertaken adequately by the proponent would have shown that the technology to construct large buildings without central support structures capable of covering coal stockpiles have in fact been available for a number of years now. This again shows the proponents review into this key option to control coal dust from coal stockpiles has been inadequate.

Some examples of buildings covering coal stockpiles are shown in Figures 4 to 7 below.



Figure 4: Construction of Coal Stockpile Building Panay Philippines



Figure 5 Coal Stockpile Building Philippines



Figure 6: Coal Stockpile Buildings Zhangzhou China



Figure 7: Construction of Coal Stockpile Building Huayang China

Health Impacts

There is evidence that pollution from coal affects all major body organ systems and contributes to respiratory problems and can cause morbidity and mortality. As reported by Damon Cronshaw in the Newcastle Herald on 30 October 2010:

‘A senior NSW health official says exposure to coal dust particulates can harm people's health, even if the pollution is within state guidelines.’
The Northern Sydney Central Coast area director for public health Peter Lewis made the submission to the Department of Planning about a South Korean company's plan for the Wallarah No 2 mine in the Wyong Shire. "Any increased exposure to particulate pollution is associated with increased adverse health outcomes, even if the levels are below the current guidelines," Dr Lewis wrote. Dr Lewis said increased particulate exposure could cause deaths, require hospital admission, and make children have more chest colds, night-time coughs and trips to the doctor.’

We are very concerned about the lack of information available about the health risks of living near coal loaders and we feel that it is very important that a full health risk assessment be conducted before any approval is given.

A recent two day forum (in September 2013) on Air Pollution and Health run by Craig Dalton had a number of presentations from worldwide experts in the field of particle air pollution. An update was provided on the latest health issues related to particle pollution and it was clearly stated there are no safe limits for fine particle pollution (PM10 and PM2.5) and health effects continue to increase as particle levels rise even when they are below the current NEPM standards. This was clearly announced by well-respected world expert in particulate pollution Professor Arden Pope from Brigham Young University in the USA.

Professor Bert Brunekreef from Utrecht University in the Netherlands also indicated the important health effects from not only PM2.5 particles but also PM10 particles and larger coal dust particles that deposit near sources and in communities through ingestion of the coal dust and that the majority of coal dust would fall into the PM10 and larger category. He also outlined some of the health effects observed with communities exposed to coal dust including respiratory effects.

A total of over 19,000 train movements and more than 700 return ship movements necessary to deliver 70Mt of coal to and from T4 will significantly increase diesel emissions in Newcastle and the Hunter. Diesel emissions are listed as a known carcinogen by the International Agency for Research on Cancer. The submission to the EA by NSW Health noted the failure of the EA to address diesel exhaust emissions and recommended a comprehensive health assessment. The RT/PPR ignores this recommendation.

Water Pollution

Directly affecting Stockton and surrounding residential areas, the proposal for the 4th coal loader carries the risk of mobilising toxic contaminants on Kooragang Island from the former BHP Steelworks waste disposal site, and in the South Arm of the Hunter

River. Too little is known about the risks to ensure the communities of Newcastle will be protected from toxic accidents, seepage and other incidents. There is no effective plan to fully remediate the site that is proposed for use for T4.

Contaminates recorded at elevated levels at the Waste Emplacement Facility on Kooragang Island (Report from Douglas Partners, 2010) were:

“Polycyclic aromatic hydrocarbons, benzo(a)pyrene, total petroleum hydrocarbons, phenols, asbestos, ammonia, cyanide, manganese, sulphate, lead and other metals. Monitoring data indicates that contaminant migration has occurred beyond the waste emplacement areas; however, the extent of contaminant migration has not been defined.

None of the landfill sites within the former Kooragang Island Waste Emplacement Facility have engineered base or side lining systems, and all but one do not have a leachate collection system.”

With T4 there will be more dredging up of toxic industrial contaminants, as well as:

“Exacerbation or migration of existing contamination and/ or new contamination, such as from mobilisation of soil contaminants into groundwater, additional loading and ‘squeezing’ of the ground, connection of groundwater aquifer systems from penetration of the clay aquitard and/or migration of potentially contaminated water that accumulates in the T4 Project area; changes to groundwater recharge and flow regimes, such as from filling and capping of the site, infiltration of saline water from dredge material used as fill and other project related alterations to the surface water regime; the risk and implications of interception, exposure and/or mobilization of contaminants and PASS, for instance from the proposed drainage and earthworks.”

There is substantial uncertainty around the impacts of proposed ground and surface water management during construction and operation due to contamination issues or inherent differences in water quality between/within the site & surrounding habitats. The precautionary principle should apply to management of these aspects if certainty cannot be provided.

Additional Coal Mines

In addition, the Fourth Coal Terminal would facilitate many more large coal mines (the equivalent of at least 10 'mega-pits') in the Hunter and Liverpool Plains which threaten food and water security by destroying prime agricultural land, irreversibly damaging ground water systems, polluting waterways and creating excessive dust and health effects for local communities.

With the advent of these additional coal mines, and of particular concern to the people of Stockton, would be the need for more products to support these coal mines. Ammonium nitrate is commonly used as the major component of explosives in the mines in the Hunter Valley. Most of it is produced on Kooragang Island. The Orica ammonium nitrate plant is located directly across the Hunter River from Stockton and has been the subject of a number of incidents and accidents over the last 2 years, including leaks of

hexavalent chromium, arsenic and ammonium. Another similar plant, also for Kooragang Island, has been proposed by Incitec. The people of Stockton have expressed huge concern over having ammonium nitrate plants as neighbours, particularly when reflecting on the history of major disasters caused by explosions in and around such plants (the explosion in West, Texas in April 2013 being a very recent example).

Traffic Impacts

The current traffic problems occurring everyday on Kooragang Island will be made worse with the T4 project and there will be significant traffic delays for the motorists.

During construction on the NCIG terminal lengthy traffic delays were experienced with the construction traffic and at times it took over 1 hr to travel into Newcastle - a trip that took normally only 20 minutes. The T4 construction traffic will interrupt the flow of traffic, causing lengthy delays. Traffic congestion results in a number of problems, including economic costs due to delayed travel times, air pollution and accidents.

Employment impacts in Newcastle and Lower Hunter

The 120 Mt facility proposed in the EA identified no additional employment would result from its operation. The revised T4 project of 70Mt million of the RT/PPR is identified as employing 80 additional people. How is this possible? This dubious additional employment is not explained.

Impacts on habitat, endangered and threatened species, and migratory birds

This project would damage internationally important wetlands that provide critical habitat for protected migratory bird species and nationally threatened species including the Green and Golden Bell Frog and the Australasian Bittern. The proposal will mean loss of habitat and disruption to an ecologically significant proportion of a population of four migratory shorebird species listed under international conservation conventions.

At least 11 species of migratory birds recognised by international treaties rely on the habitat at "Deep Pond" and its proximity to the Hunter estuary Ramsar site. Most of Deep Pond, the only freshwater refuge in the Hunter estuary, would be lost to this project.

Little has changed between the Environmental Assessment and the PPR in terms of the proposed degradation of Ramsar wetland values through the removal of existing estuarine habitat. Significant habitat is known to be present within the T4 project area and this cannot be adequately compensated by the proposed mitigation measures and offset strategies. The offset strategy proposed by PWCS cannot compensate for T4's proposed impacts.

Global Warming

The burning of an additional 70Mt of coal a year will add 174.2Mt of carbon dioxide to the atmosphere. This is equal to 30% of Australia's total annual GHG emissions. The International Energy Agency predicts that to limit global warming to under 2 degrees

Celsius, global coal demand must peak in 2016, at least a year before PWCS indicates T4's will begin operation.

Summary

We object to the new T4 coal terminal as we think the project will:

1. Increase coal dust pollution in Stockton
2. Result in increased need to clean homes and facilities from coal dust fall-out
3. Increase respiratory health issues due to increased coal dust
4. Lead to increased morbidity and possible mortality
5. Increase health issues from coal dust ingestion from coal dust deposited on homes and gardens especially with children
6. Increase PM10 levels which already significantly exceed NEPM standard of $50\mu\text{g}/\text{m}^3$ at Stockton with 25 exceedances in the last 12 months with 12 failures directly related to winds from Kooragang Island
7. PM10 failures at Stockton are well above exceedances at the Newcastle, Wallsend and Beresfield air quality stations. The Newcastle, Wallsend and Beresfield continuous monitors were mainly used for the air quality modeling for T4 giving incorrect assessment of increased exceedances and particle levels at Stockton
8. Cause an increase in the need for mining related products such as ammonium nitrate, which is produced and stored on Kooragang Island, directly across the Hunter River from Stockton. Stockton residents already feel vulnerable with the current ammonium nitrate production and storage due to the explosion risk and pollution bringing health risks. This vulnerability would only worsen with more need for more ammonium nitrate through having more mines.
9. Cause major traffic problems during construction
10. Be using a business as usual approach to using water sprays for coal dust controls for open stockpiles for T4 instead of best available technologies and this will lead to increased coal dust in Stockton
11. Increase coal dust levels when the community is expecting further improvements to control coal dust from existing open coal stockpiles to reduce the current coal dust problems experienced in the Stockton community. There is a need to have buildings to cover stockpiles or wind fences surrounding stockpiles to eliminate or reduce coal dust from the coal stockpiles and these are not being proposed for T4. These systems are used in some other countries and are proposed for the new Bunbury project in WA where coal stockpiles are near communities
12. Add no new jobs to Newcastle
13. Damage internationally important wetlands
14. Lead to the possible exposure of workers and communities to very toxic chemicals deposited on the T4 site from the old BHP steel mill.
15. Result in more large open cut mines leading to loss of prime agricultural land, threaten water supplies and cause pollution and health concern for local communities

As submission makers are required to disclose political donations totaling \$1000 or more in the past 2 years, we can state that **we have not made a disclosable donation.**

Yours Sincerely,

Kate Johnson

Chairperson

Stockton Community Action Group