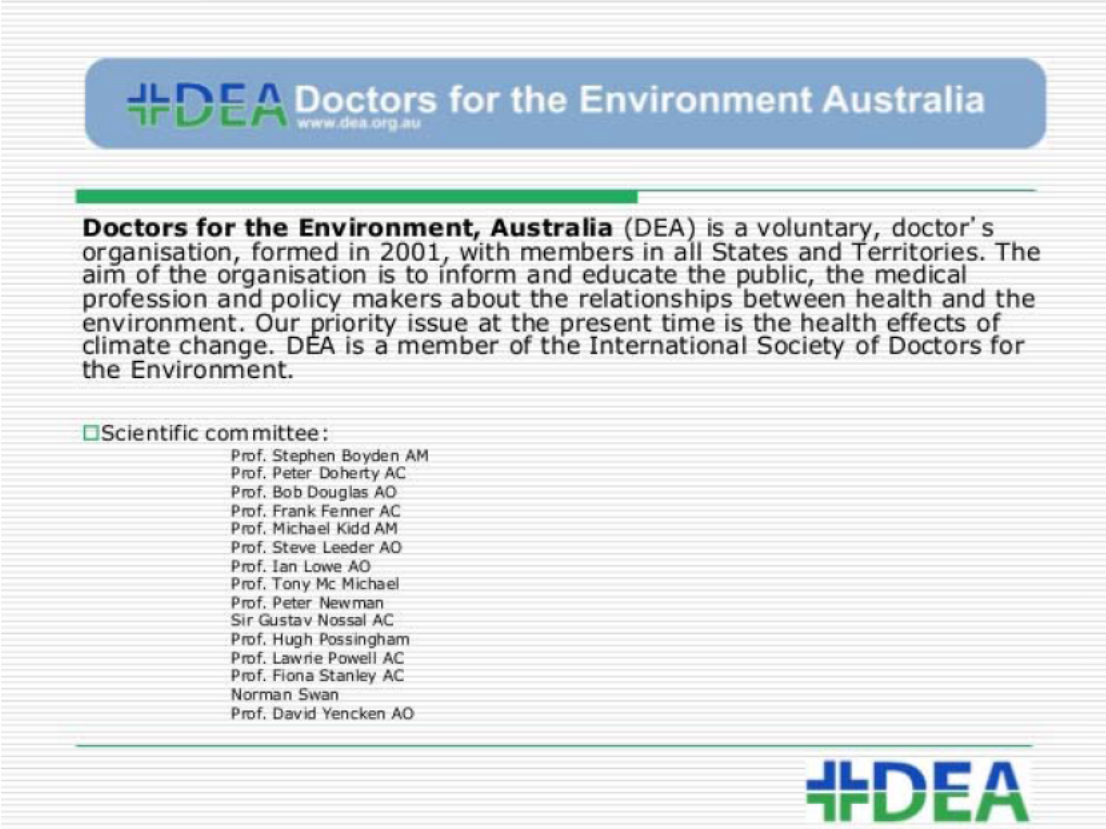
Rocky Hill
Dr. John Van Der Kallen

Doctors for the Environment
Rheumatologist
Newcastle Bone Density
Conjoint Lecturer, University of Newcastle

"Healthy Planet, Healthy People"



DEA Doctors for the Environment Australia
www.dea.org.au

Doctors for the Environment, Australia (DEA) is a voluntary, doctor's organisation, formed in 2001, with members in all States and Territories. The aim of the organisation is to inform and educate the public, the medical profession and policy makers about the relationships between health and the environment. Our priority issue at the present time is the health effects of climate change. DEA is a member of the International Society of Doctors for the Environment.

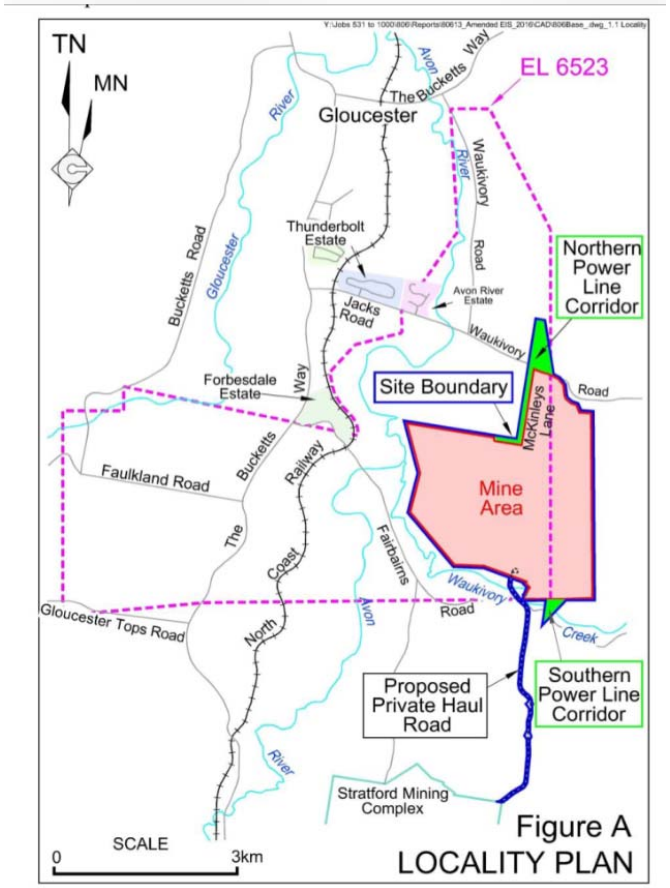
- Scientific committee:
  - Prof. Stephen Boyden AM
  - Prof. Peter Doherty AC
  - Prof. Bob Douglas AO
  - Prof. Frank Fenner AC
  - Prof. Michael Kidd AM
  - Prof. Steve Leeder AO
  - Prof. Ian Lowe AO
  - Prof. Tony Mc Michael
  - Prof. Peter Newman
  - Sir Gustav Nossal AC
  - Prof. Hugh Possingham
  - Prof. Lawrie Powell AC
  - Prof. Fiona Stanley AC
  - Norman Swan
  - Prof. David Yencken AO

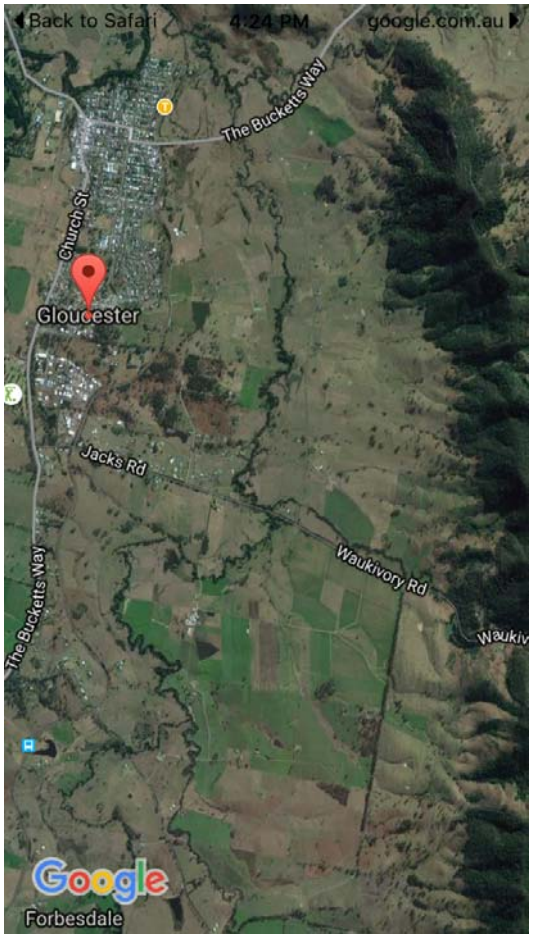
DEA

DEA rejects the Rocky Hill proposal on the following grounds

- Air quality
- Blast plumes
- Noise pollution
- Effects on water quality
- Light pollution
- Psychological impacts on the community
- Effects on Indigenous heritage
- Effects on those along the “coal path”
- Increase in greenhouse gases and worsening of climate change

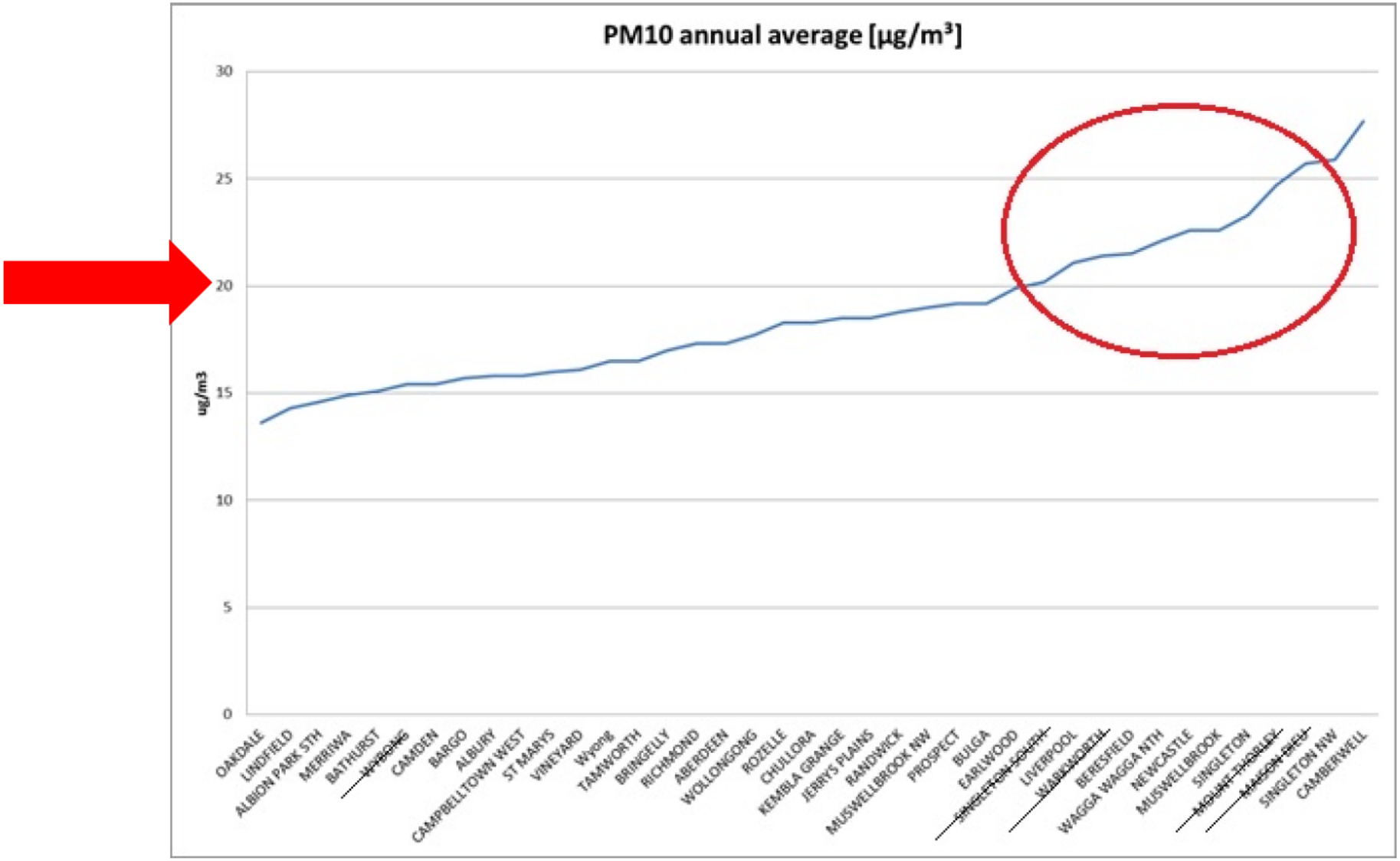
Mine site


TN
MN
EL 6523
Gloucester
The Bucketts Way
Avon River
Waukivory Road
Thunderbolt Estate
Northern Power Line Corridor
Avon River Estate
Jacks Road
Waukivory
Bucketts Road
Gloucester
Forbesdale Estate
Way
Site Boundary
Road
McKinleys Lane
Faulkland Road
Bucketts
Railway
Mine Area
The
Coast
Fairbairns
Waukivory
Road
Gloucester Tops Road
North
Avon
Creek
Proposed Private Haul Road
Southern Power Line Corridor
River
Stratford Mining Complex
SCALE
0
3km
Figure A
LOCALITY PLAN


Back to Safari
4:24 PM
google.com.au
The Bucketts Way
Church St
Gloucester
Jacks Rd
Waukivory Rd
The Bucketts Way
Google
Forbesdale

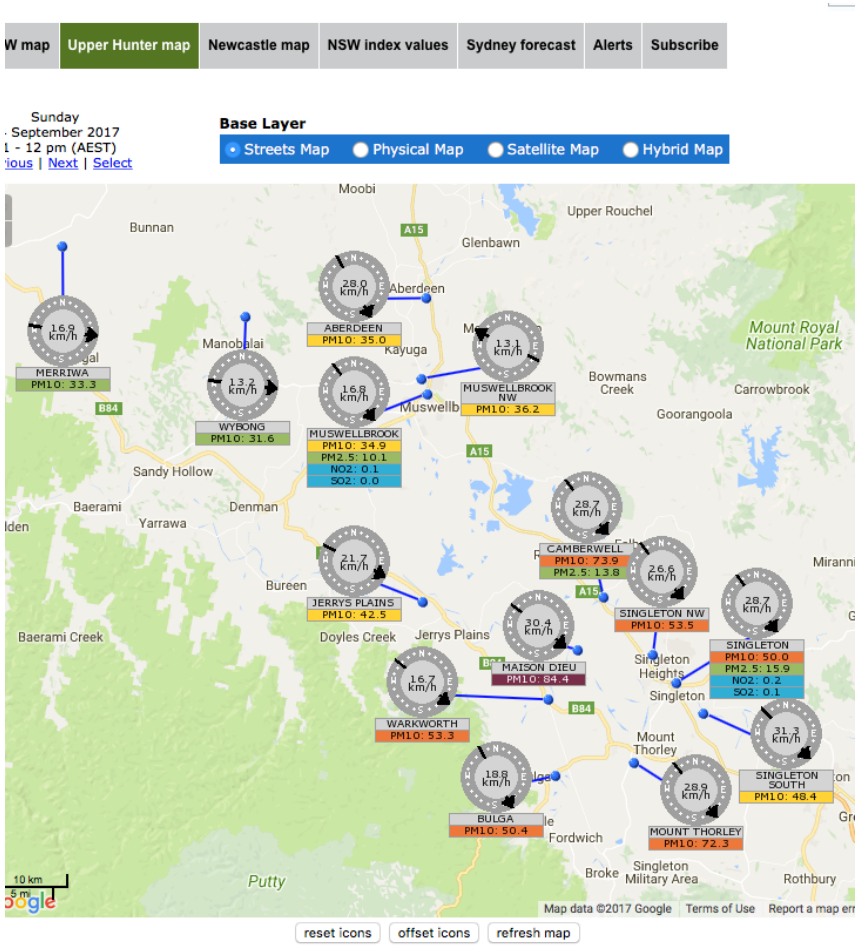
Camberwell

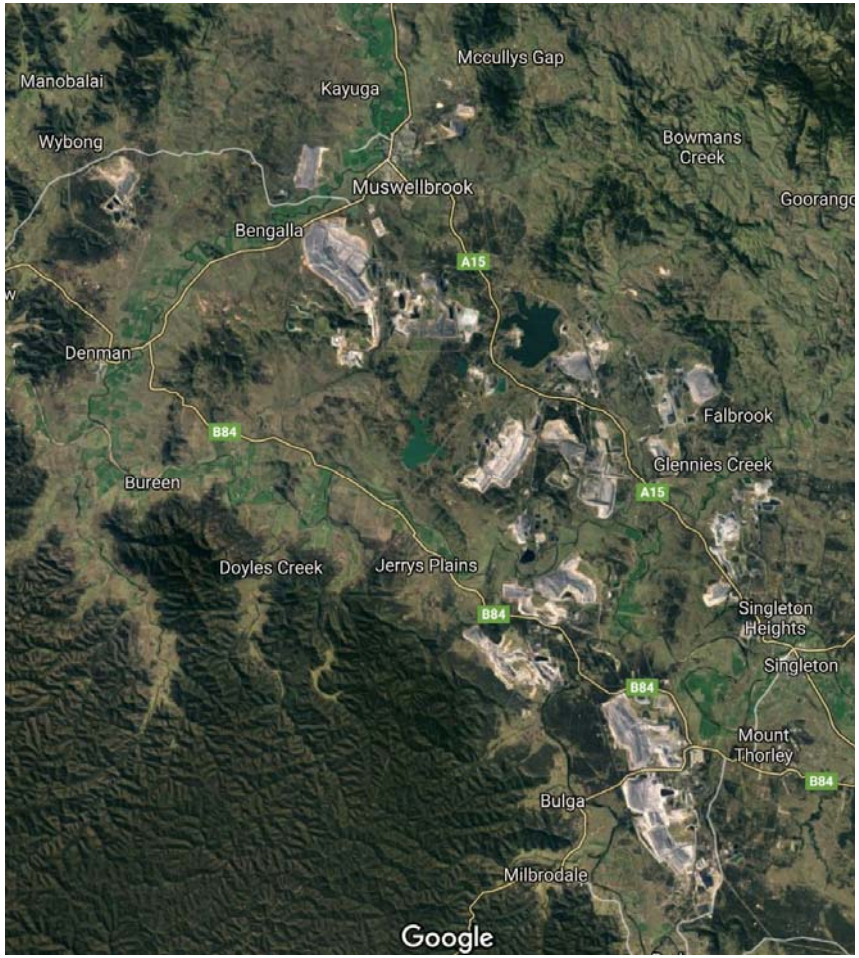
2013 annual PM10 from 39 monitors across NSW.



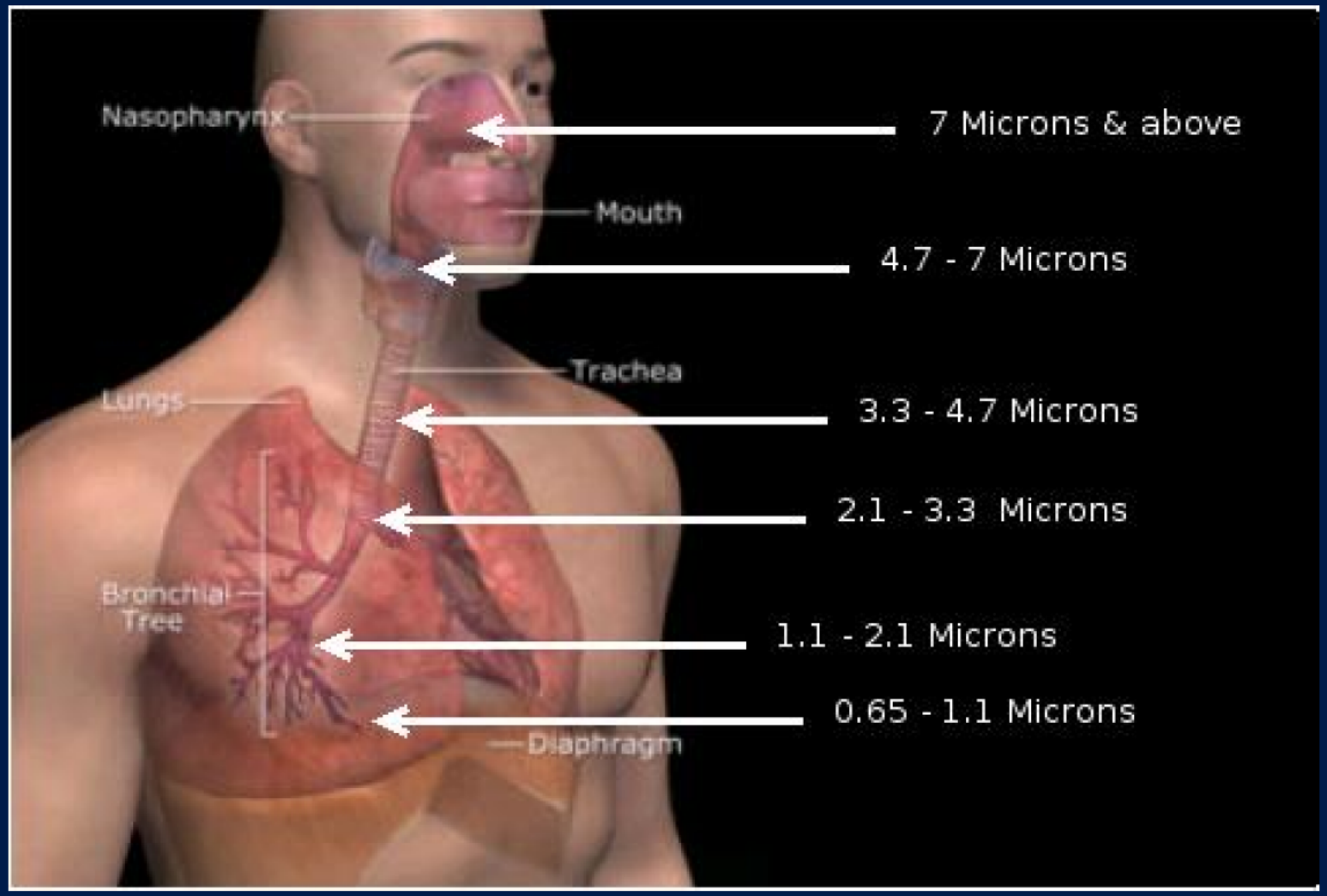
	$PM_{2.5}$ 24 hour average	$PM_{2.5}$ Annual average	PM_{10} 24 hour average	PM_{10} Annual average
National standards agreed by Environment Ministers December 2015	25µg/m^3 in 2016 20µg/m^3 in 2026	8µg/m^3 in 2016 7 µg/m^3 by 2026	50µg/m^3	25µg/m^3
Guidelines referred to in the Rocky Hill EIS	25µg/m^3 (advisory only)	8µg/m^3 (advisory only)	50µg/m^3	30µg/m^3 (advisory only)

Air Quality near open cut mines





Particle size



Source: http://en.wikipedia.org/wiki/Respiratory_system

Effects on health in the Hunter
2007 ED respiratory presentations

Age group	location	n	Rate/100,000
0-14	Singleton	2026	13255
	Muswellbrook	1305	13368
	Rest of HNEAHS	41983	8806
	Sydney	114713	5981
65+	Singleton	306	5005
	Muswellbrook	235	5676
	Rest of HNEAHS	19869	5035
	Sydney	49868	3967

Respiratory and cardiovascular disease and cancer among residents of the Hunter New England Area Health service, 2010

All cause mortality, 2002-07

region	sex	n	Rate/100,000
Lower Hunter	M	2990	879
	F	2891	578
	total	5881	**703**
Greater Newcastle	M	8660	678
	F	8154	444
	total	16813	**547**
HNEAHS	M	21365	838
	F	19775	548
	total	41140	**677**
All NSW	M	140934	766
	F	134585	510
	total	275519	**624**

Respiratory and cardiovascular disease and cancer among residents of the Hunter New England Area Health service, 2010

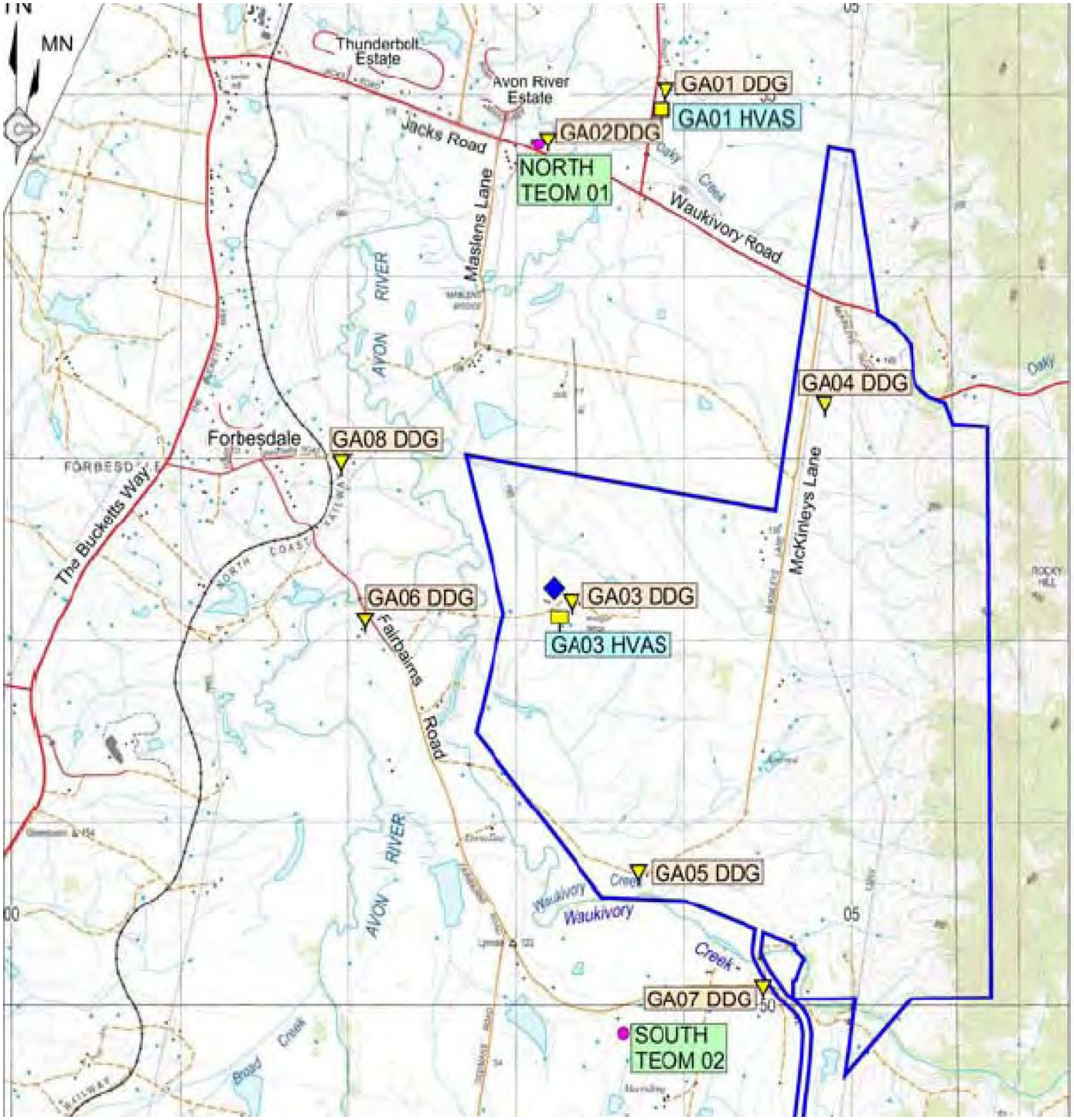

MN
Thunderbolt Estate
Avon River Estate
GA01 DDG
GA01 HVAS
GA02DDG
NORTH TEOM 01
Jacks Road
Maslens Lane
Waukivory Road
AVON RIVER
GA04 DDG
Forbesdale
GA08 DDG
The Bucketts Way
McKinleys Lane
GA06 DDG
GA03 DDG
GA03 HVAS
Fairbairns Road
GA05 DDG
Waukivory Creek
GA07 DDG
SOUTH TEOM 02
Broad Creek

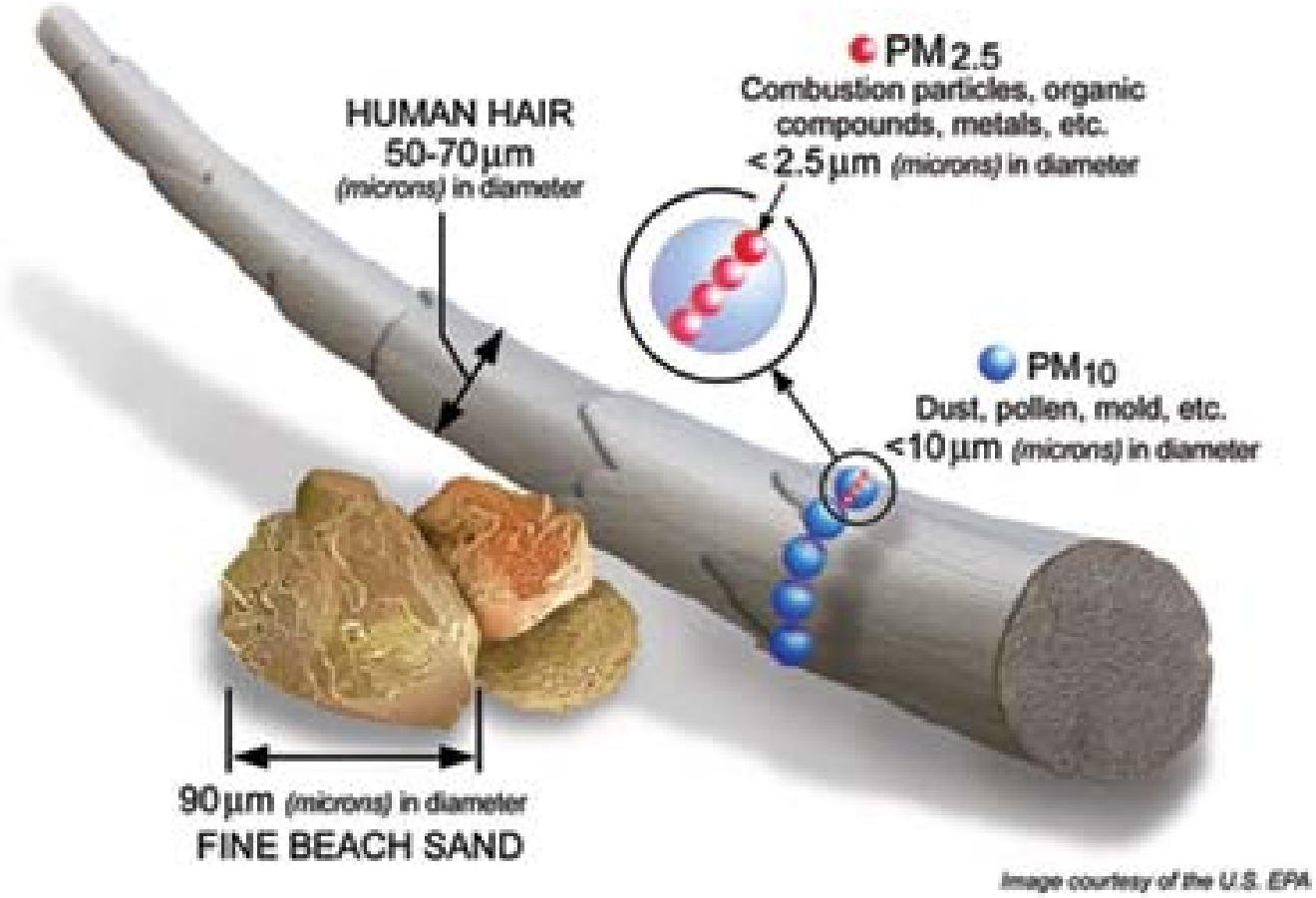
Table 4.20
Highest 24-Hour Average PM Concentrations (µg/m^3)

Date	GA01 HVAS	GA03 HVAS	North TEOM01		South TEOM02	
	PM_{10}	PM_{10}	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
31/10/2014[(a)]	**52**	**42**	40	29	40	27
25/08/2013	18	27	22	17	**52**	**43**
18/10/2013	41	41	**48**	**28**	45	27

Note: (a) The maximums at HVAS – GA01 and HVAS – GA02 occurred on the same day.

Source: Pacific Environment (2016a) – Table 5.6

Dust and Air Pollution
Particulate matter, described by size



Hunter New England LHD submission

- “as the incremental impact of PM2.5 relates to changes in health risk, it is of concern for a community with relatively good air quality where a development is proposed”
- “This would represent a non-neglible increase in health risk”
- “NSW Health would recommend that all reasonable and feasable measures are taken to minimise exposure to the community”

Duralie Mine - Buckett’s Way

Failure of air quality monitoring

- 181 air quality alerts in the Upper Hunter Valley from Jan-Oct 2017
- 72 alerts in September alone
- NSW air quality program is not finalised
- Need baseline and ongoing real time air quality monitoring
- There is no guarantee that the population of Gloucester will be protected against a worsening of air quality
- Need clear “stop work” limits on the mining and procedures in place to deal with unplanned worsening of air quality

Fire Hazards – Morwell 2014

Mine blast gone wrong spews toxic cloud

Joanne McCarthy

SHARE TWEET MORE

A toxic fume from a blast at the Mount Arthur mine in the Upper Hunter turned the sky bright orange and prompted demands for a much stronger response from environmental regulators.

Ammonium nitrate and fuel oil were detonated at the mine near Muswellbrook on Wednesday afternoon, causing poisonous fumes containing nitrogen dioxide to spread several kilometres from the site.

The sky above Mount Arthur mine in Muswellbrook glows orange after a blast that went wrong. Photo:

HUF

Prison
In Ser

Houdi
Crowd

Blast Plumes

- There maybe up to 4 mine blasts per week from the rocky Hill mine
- Blast plumes are unpredictable and dangerous
- They can result in exposure to nitrogen dioxide (and other unknown compounds) resulting in respiratory irritation, pulmonary oedema and death

Symptoms from high level exposure

- Eye, nose and throat irritation and coughing
- Dizziness and headache
- Shortness of breath
- Wheezing or exacerbation of asthma

- Serious lung inflammation (pulmonary oedema) has been known to develop several hours after exposure to very high levels of NO2

Previous blast plume incidents

- A number of workers at Mt Thorley were hospitalised when a blast plume travelled 3 kilometers from Warkworth mine
- A similar blast plume in QLD asphyxiated workers 6 kilometers away

Trade & Investment
Mine Safety

SAFETY BULLETIN

Exposure to dust and gases

BACKGROUND

Recent incidents of exposure to dust and potentially hazardous gases from open cut mine blasting have resulted in hospital treatment for several mine employees. These incidents do not appear to have involved water and excess oxides of nitrogen as there was little, if any, orange fume produced from the associated blasts. The cause of the irritant is still being investigated.

MANAGING BLASTING DUST AND GAS

While it may not be possible to eliminate dust and gas generation from blasting, it is essential to minimise exposure of personnel to these hazards. Site blasting procedures should identify the potential to generate these products of blasting and limit their impact, not only on mine personnel, but also the public. Hot weather and strong wind can provide conditions that promote formation and dispersal of dust from surface blasting. If hazardous blasting gases are produced, these can also be spread significant distances by strong wind and cause potential health hazards.

Blasting related to dust and gas production may consider, but not be limited to, the following:

- Wind speed and direction
- Ground conditions
- Explosives selection
- Evacuation distances
- Gas monitoring
- Communication on the blast site, to surrounding operations and the public

Mine Safety Report No: SB14-01
Prepared by: Andrew Brodbeck
Phone: 024931666
Date Published:15January 2014

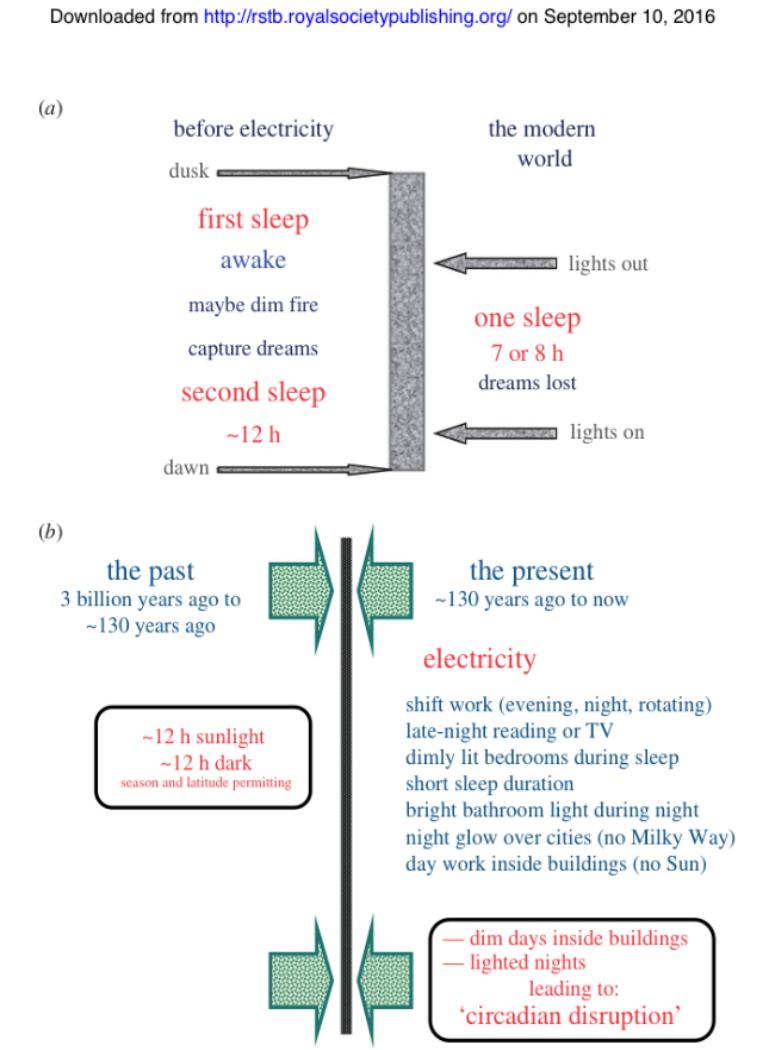
Blast Plume along Buckett’s Way

Mitigation against Blast Plumes

- Extensive community education program informing them of the risk and what to do in the event of a blast plume
- Upgrade of the local health facilities to be able to manage a serious event with multiple victims
- Particular upgrades to local child care facilities

Light Pollution - Coal mine at night

Light Pollution



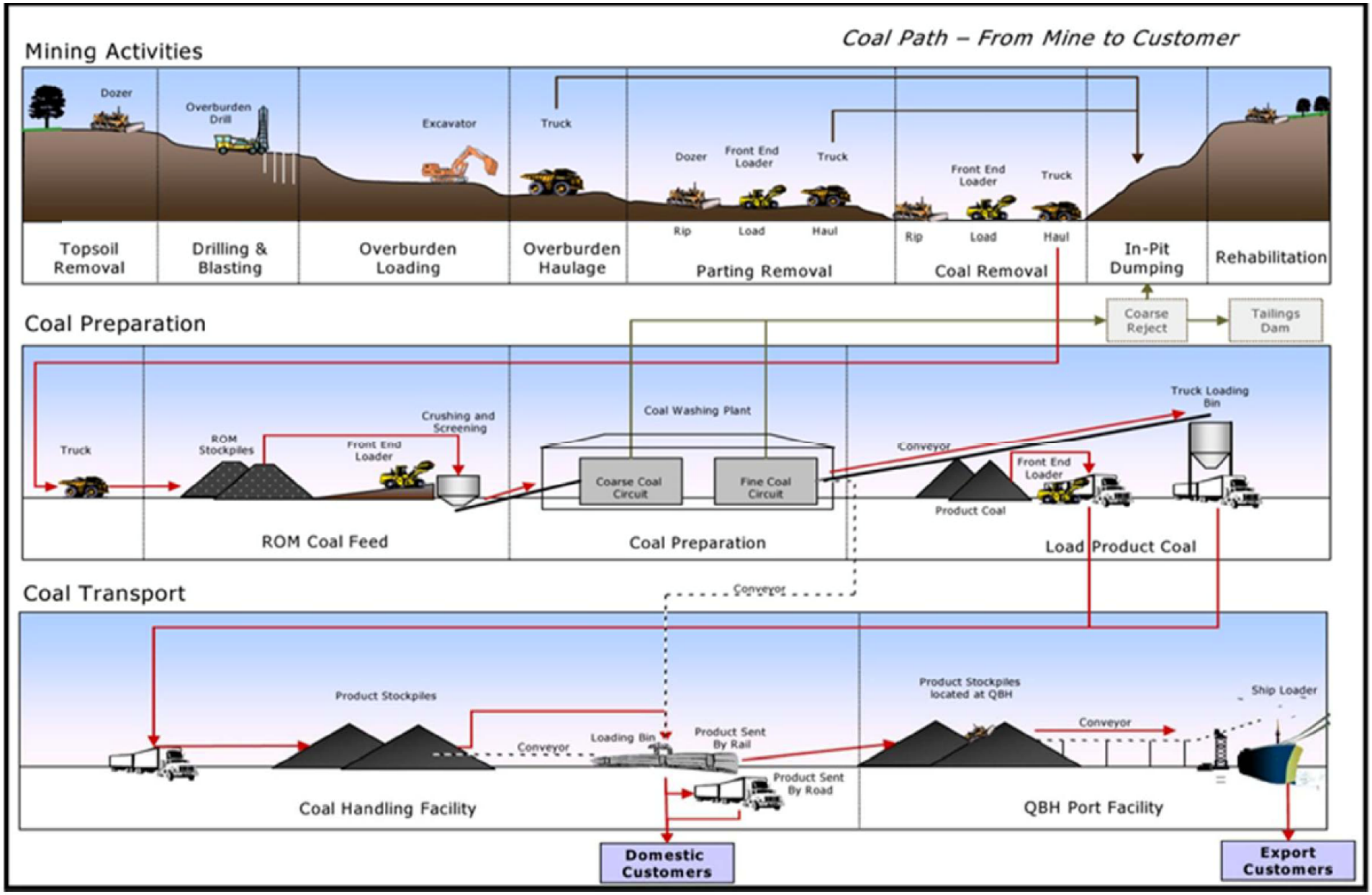
ty, sleep occurred in the dark and was biphasic; in the modern world, sleep is compacted to a shor
(b) Electricity has changed society in many ways. (Online version in colour.)

- Disruption of circadian rhythm
  - Effects sleep/wake cycle
  - body temperature regulation
  - hormone regulation
  - Patterns of gene expression

Psychological aspects

Social distress and environmental injustice including

- concerns over the cumulative health effects
- impacts of mining activities
- social divisions and inequalities
- feelings of loss and disempowerment
- pollution/poor air quality,
- environmental damage and the potential to impact negatively on future generations (loss of intergenerational equity)


Coal Path – From Mine to Customer
Mining Activities
Dozer
Overburden Drill
Excavator
Truck
Dozer
Front End Loader
Truck
Front End Loader
Truck
Rip
Load
Haul
Rip
Load
Haul
Topsoil Removal
Drilling & Blasting
Overburden Loading
Overburden Haulage
Parting Removal
Coal Removal
In-Pit Dumping
Rehabilitation
Coal Preparation
Coarse Reject
Tailings Dam
Truck
ROM Stockpiles
Front End Loader
Crushing and Screening
Coal Washing Plant
Coarse Coal Circuit
Fine Coal Circuit
Conveyor
Truck Loading Bin
Front End Loader
Product Coal
ROM Coal Feed
Coal Preparation
Load Product Coal
Coal Transport
Conveyor
Product Stockpiles
Conveyor
Loading Bin
Product Sent By Rail
Product Sent By Road
Product Stockpiles located at QBH
Conveyor
Ship Loader
Coal Handling Facility
QBH Port Facility
Domestic Customers
Export Customers

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

September 26, 2017

Millennium Bulk Terminals-Longview, LLC
[redacted]
Longview, WA 98632

RE: Section 401 Water Quality Certification Denial (Order No. 15417) for Corps Public Notice No. **2010-1225** Millennium Bulk Terminals-Longview, LLC Coal Export Terminal – Columbia River at River Mile 63, near Longview, Cowlitz County, Washington

Dear Ms. Gaines:

The Washington State Department of Ecology (Ecology) has reached a decision on the Millennium Bulk Terminals-Longview request for a Section 401 Water Quality Certification for the proposed coal export terminal near Longview. After careful evaluation of the application and the final State Environmental Policy Act environmental impact statement, Ecology is denying the Section 401 Water Quality Certification with prejudice.

The attached Order describes the specific considerations and determinations made by Ecology in support of this decision to deny the Certification with prejudice. Your right to appeal this decision is described in the enclosed denial Order.

Sincerely,

Maia D. Bellon
Director

Multiple grounds for rejection

- “a significant increase risk of cancer risk for areas along rail lines”
- “increased cancer risk rate of up to 30 per million”
- “train related noise [and vibration] levels would increase” impacting on 229 residences
- Mitigation of these issues would not avoid their impacts

Acland mine expansion rejection 2017

- Groundwater depletion
- Noise
- Air quality
- Economic benefits of the project were overstated
- Extension into the “food bowl”
- Loss of agricultural land being contrary to intergenerational equity
- Poor past performance of New Acland Coal P/L
- Prejudice to the public interest

DEA rejects the proposal on the following grounds

- Air quality
- Blast plumes
- Noise pollution
- Effects on water quality
- Light pollution
- Psychological impacts on the community
- Effects on Indigenous heritage
- Effects on those along the “coal path”
- Increase in greenhouse gases and worsening of climate change