

# Singleton Shire Healthy Environment Group

## “MTW Continuation Project July 2014”



*A community-based group looking to address Environmental issues affecting Singleton Shire residents*

P.O. Box 626

Singleton NSW 2330

[ssheg@hotmail.com](mailto:ssheg@hotmail.com)

Author: Dr Neville Hodkinson PhD

We seek identification as to what is making our Children and Community Sick so they can be mitigated by OH&S Compliance Orders.

### SSHEG Focus on Health

SSHEG is Not Anti Mining or Anti Power Stations

**Mount Thorley Extension 2014**

**Warkworth Continuation 2014**

[elle.donnelley@planning.nsw.gov.au](mailto:elle.donnelley@planning.nsw.gov.au)

18 July 2014

### **SSHEG Submission of Conditional Support for Mining Continuance 2014 – 2035 for the Mt Thorley and Warkworth Mines Continuation Project**

## **PART A Pollution Health Impact**

This SSHEG Submission supports the Application, provided Mine Operating Compliance Licence Conditions are effectively included to “Designate Near Neighbours, Farmers and Farming Families close to Open Cut Mines are Occupationally Exposed Persons to Mining Operations and are to have at least the same Health Protections and Medical Testing as Underground Mine Workers”.

Two Compliance Licence Conditions are outlined in **Attachment 1** entitled “SSHEG Document March 2014 Mining Pollution Mitigation Priority Action”.

- (1) Elimination of Blasting Plumes into the Atmosphere.
- (2) Residents in the Broke, Fordwich, Milbrodale, and Bulga Micro Valley to be designated as “Occupational Exposure to Mining Status” concurrently with Bulga and Wambo Mining Operations, requiring Mt Thorley and Warkworth Mining approval being conditional on compliance Orders regarding Air Quality Gases and Particulates Standards the same as Underground Miners, such as Time Weighted Average (TWA) and specifically relating to Short Term Exposure Limits (STEL) .

SSHEG support for the MTW Mining Continuation Project is based on the need to restore a better balance of the "Health Risk for Residents" to compensate for the removal of the long standing practice of "Mine Buffer Zones" effectively separating Residents and Industrial Pollution; this approach establishes that "Near Neighbours, Farmers and Farmers Families and Villages and especially Children" are presently bearing the brunt of Mine Pollution on account of their proximity to Mines in a somewhat enclosed Broke Bulga Micro Valley Environment.

By imposing Mine Operating Licence Conditions on both Mt Thorley Mine Operations and Warkworth Mine Operations that would give "Near Neighbour Singleton Shire Residents" the same "15 Minute STEL Pollution Exposure Limits" for OH&S Protection as Underground Miners; particularly regarding 15 minute Exposures relating to "Drifting Blast Plume Gassings", as well as Air Quality Health Protections traditionally associated with "Lung Cancer, Cardiovascular Diseases and Respiratory Diseases, Bladder Cancer, etc. in Mines and any Cancer clusters investigations traditionally associated with Underground mining".

For "Near Neighbours and Farmers" that live and work above ground (but nearby Mines) these Underground Mine Air Quality Standards provide the closest Occupational Health and Safety Regulations for "Near Neighbours" Air Quality for Human Disease Protection that are quite similar to Air Pollution Exposure conditions that are being experienced and reported on a daily basis by Singleton Shire Residents whose Health is being affected by nearby Open Cut Coal Mines. This is in no way to diminish any other Community Health protection legislation obligations such as those provided in EPA Act 156 entitled "Protection of the Environment Operations Act 1997", particularly Section 295ZC "Conduct of Health Risk Analysis" related to Pollution Incidents such as "Blast Gassings".

**SSHEG contend that the Environment in the Hunter Valley, especially the Air Quality contains Gases, Particulates, Vapours, Fumes, Aerosols, Pollens, etc., requires better targeted Short Term Monitoring of the Composition, Toxicity, Exposure and related Health effects (where 2014 sees the challenges of the new World Health Organisation "Stochastic" Air Pollution Paradigm, also recognised by the NSW EPA); and better Mitigation steps are need to reduce these Health Risks for Residents.**

But it is especially all children, Pre & Post Natal and Children under 8 years of age that are now being confirmed as one Population Group vulnerable to Air Pollution; confirming the Singleton Community Health Survey Reports. These SSHEG Health Surveys in 2008-9 and Community Reports by 2010 already identified that the Air Pollution of the Cluster of Mines in the Bulga-Broke Micro Valley area were impacting the Health of all Resident groupings in this area, for both Long and Short Term Exposures.

**This Submission therefore calls for Mine related Gaseous and Particulate Matter (including Pollens, Spores, Moulds) Monitoring and Analysis at Broke School in conjunction with the Dr Au Asthma Study proposal to ascertain over a two year initial period the Short Term Pollution Human Health implications of this area.**

Details of the Bulga-Broke Micro Valley are separately outlined in **Attachment 2** entitled "*Micro Valley Study of Mining coexisting with Residents, Farming, Vineyards and Horse Studs in the Hunter Valley of NSW Australia*".

This “Cockfighter Micro Valley” forms a blind ended Valley in the Bulga-Broke area which for South Drifting Air Patterns would tend to “concentrate and stagnate” Mines Air Pollution trapped along the Bulga Mountain Escapement into a “Pollution Rich Pocket” formed by the Pokolbin State Forest restriction just South of Broke Village. The distinct Odour of Mining often permeates the area.

It is the complexity of the land contours leading into the “Broke Pollution Stagnation Pocket” that warrants consideration with respect to the Air Pollution Health Risk from the cluster of Power Stations and five Open Cut and two Underground Coal Mines that feed and emit Pollution towards this area.

**SSHEG therefore in making this submission, considers that additional Real Time Air Pollution Monitoring (TSP, PM10 and PM2.5) with Gases and Particulates Matter Sampling and Analysis including Gases {Ozone, CO, CO<sub>2</sub>, SO<sub>x</sub>, NO<sub>x</sub>, CH<sub>4</sub>, formaldehyde and VOC’s) located in the Broke School Environs is overdue for inclusion; as also recently made in a submission for Bulga Optimisation Project Compliance Licence Conditions to be used for Real Time Pollution Mitigation Controls at both the Bulga Open Cut and Bulga Underground Mine Optimisation: In this Submission the MTW Open Cut Mine Continuation Operations for South Drifting Air Patterns would be expected to pass onto the Bulga Operations reinforcing the Air Pollution exposures at the Broke Environs.**

We are also aware that one Bulga Resident (Typically Location 32) has in the past reported “Gassings” in their backyard many Kilometres from MTW Mine Blasting Plumes NNW of Bulga Bridge and West of the Hunter River. These “Gassings” have occurred elsewhere across the Hunter Valley and should have been red flags to Government Authorities and Mining Companies that action was required. The recent “Gassing” of BOC workers outside the MTW Lease area Blast on 20 September 2013 highlights that **notification of Blast time is not sufficient**, but rather **evacuation of residents** within a prescribed range of say 15 kms in the **Predicted Blast Plume Drifting Pathway** is a more realistic Mine procedure.

SSHEG has concluded “The Elimination of Blast Plumes into the Atmosphere”. (The Disease and Sickness Risk to Near Neighbours from Mine Blasting in the Hunter Valley, with Mines located amongst Rural Residents, depends entirely on Mining Blast Protocols and repeatable Meteorological Wind to dissipate Toxic Blast Plumes. The reality is that Wind Directions have been known to change direction unexpectedly just after Blasting. A repeat of the SE Qld “Gassing and Hospitalization of 21 Mine workers some Kms from the blast site remain a reality in the Hunter Valley.”)

We feel that for Open Cut Mining to continue Operating beside Residents in the absence of “Community Buffer Zones” in the Hunter Valley that it is essential that a way forward of Pollution Mitigation be added to existing Mitigation measures that not only reestablishes a better Balance but also is seen by the affected Residents and the Community

as establishing that Balance.. However the risk of “Near Neighbour Gassings” demands action.

#### APPENDIX 5 LAND OWNERSHIP





Threshold”, it is not surprising when these Residents see HUGE Blast Dust and Toxic Plumes rising into the air and drifting towards their Homes. Should this Plume be bright orange, then it strikes panic and resentment in the vulnerable of the Community, and soon Community Complaints flood the Authorities and Health Warnings are issued.

## TOXIC SKY: Mine blast goes wrong

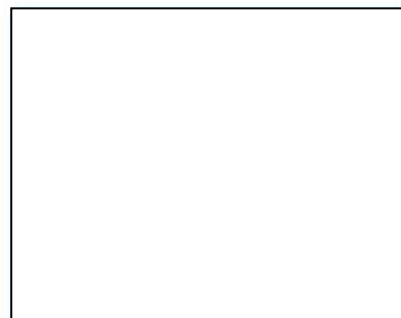
By JOANNE McCARTHY Feb. 20, 2014, 10:30 p.m.



FALLOUT: The sky above Mount Arthur Mine near Muswellbrook turns a bright orange due to the toxic fumes.

MOUNT Arthur mine has been accused of putting “profit before people” after a toxic orange fume darkened the Muswellbrook sky on Wednesday and prompted demands for a much stronger response from environmental regulators.

The Environment Protection Authority is investigating a blast at 2pm that led to health warnings and an apology from BHP Billiton after the fume containing poisonous nitrogen dioxide spread several kilometres from the site.



Of serious concern in this submission is the reported “Gassing and Hospitalisation” at Bulga Mine as Workers reported what now appears to be “Occupationally Exposed to Drifting Blast Plume” emanating from Mt Thorley Warkworth (MTW) Mine Blasting that drifted and landed at ground level outside the MTW Lease area. (After repeated requests **Attachment 3** was finally provided as the explanation and circumstance). However this report is rather superficial when what is required is a Technical detailed Report which would enable proper scrutiny to occur. Most importantly, in this BOC Workers “Gassing”, current Best Practice focus on Plume Colour to represent the OH&S Health Risk seems now misguided as this Blast is a Grade 1 of 5 Low Risk Type confirming what the Community has been reporting that all Blast Plumes are a “Disease Danger to Humans” should they not disperse but return to ground, especially on the unprotected Community outside the Mine Leases (Refer **Attachment 3** Photos illustrating the nature of Blast Drifting Images captured and Report).

We also note that Mine Blasting Plume Image Videos (Att'm 3) seem to only show the Plume appearing over the Mine edge, but the Technical understanding of the effectiveness of the Blast design needs to capture the Blast Hole Matrix surface impact to visualize any Blast Hole Breakouts that Spew Dust, Flames, Toxic Fumes high into the Atmosphere, showing the actual behavior and effectiveness of the Blast.

## **PART B    Bulga Noise Impact Warkworth Chapter 10, Mt Thorley Chapter 9**

Reviewing the MTW Mines track record regarding Residents Noise clearly identifies that 2014 Noise Modelling such as involving INP and non- discretionary development standards relating to cumulative Noise will just like past 2002 Modelling fall short of the mark of the Hour to Hour Noise actually experienced by Residents.

The complexity of the Health Impact of Noise aggravation, sleep disturbance, “mental effects of low frequency ground vibrations such as the unpredictable “Ground Vibrating Nodes and resultant critical health outcome at Long Point for example” are slow to be recognized by Authorities. However much Technical and logistical resources have been brought to bear in the last two years to understand the extent of the Bulga Community Noise aggravation, much of which has been traced to individual Mine Machines and Mine Operational areas, that when taken out of service diminishes the Resident’s Noise to “Compliance Levels”.

It is clear in the 2014 EIS Chapter 10 and Appendix F that elaborate Noise Modelling efforts have been undertaken to understand and control within limits the Operational Noise of MTW Mining. However while the Compliance Limits set by any Approvals may be argued as being appropriate in Rural setting, particularly late at nights, the 2012 and 2013 Legacy of Community Noise Complaints has clearly established that in most instances there is real substance in the Noise Disturbances that MTW mining operations is responsible for.

Chapter 10 MTW EIS NOISE tends to focus on “Acquisition Limits and Rights” but little attention focuses on Noise Mitigation at Residents such as Noise Insulation and window Noise reduction Double glazing. However the preferred Community approach is to Mitigate Noise at the Mining Source.

SSHEG are concerned that just as in the past the 2014 Noise Modelling will be found to be inaccurate over the 21 year life of this Mining Proposal. \*(Refer also Note 4 Part B)

SSHEG is critical of the somewhat selective Meteorological Conditions that have been used for both the Air Quality and Noise Modelling; namely 2012 Met. Data which ignores the significant NNW and NW Wind Patterns..

**SSHEG approval is subject to all 2014 EIS MTW Modelling being redone based upon 2013 and 2008 Met patterns to redress the obvious bias that exists in the current EIS documents.**

Two different Technical EIS Experts , one in 2010 EIS (PAE Holmes) and the other in the 2014 EIS ( TAS) provides by their comparison an insight into the limitations that exist in Modelling; that is Modelling is only as good as the Data it is based upon.

## **PART C 2010 MTW SSHEG Submission**

As Rio Tinto Coal & Allied have in essence resubmitted the 2010 Mining Proposal thus the 2010 SSHEG MTW submission details ([Attachment 5](#)) are to also apply here in the 2014 MTW Continuation Proposal.

From the SSHEG viewpoint a number of changes however need to be noted:-

### **Note (1) Incorporate 2013 WHO impact**

**This SSHEG Submission reminds Authorities and Mining Companies that since 2010 that “Human Disease - Cancer” is now in 2014 directly connected to Air Pollution Exposure, and this understanding without any threshold needs to be factored into “Health Risk Assessments” as well as Industrial, Government and Community behaviours. After 30 years of Medical Epidemiology Cohort Research, this “Game Changer” World Health Organisation understanding came in June 2012 as Diesel Exhaust, and by October 2013 that Air Pollution and Particulate Matter are all Group 1 Carcinogenic to Human Health.**

Unfortunately both the “Mount Thorley Operations 2014” and the “Warkworth Continuation 2014” Environmental Impact Statements has relied on past Modelling understandings of Blast Plumes and Air Pollution, and their preconceived approaches and apologies, but so far the Time Rate of Pollution Exposure WHO Understanding changes have not yet been factored into these Air Pollution Assessment Methodologies as Air Quality Standards are reduced during the 21 years of Mining.

### **Note (2) SSHEG 2013 WHO impact**

The sudden Modification 6 Warkworth Mining Application in November 2014 provided the opportunity to remind the Authorities and Rio Tinto Coal & Allied that the WHO Air Pollution impact on the Health of Hunter Valley Residents from Mining demanded immediate consideration and appropriate implementation.

( Refer SSHEG Mod 6 Submission dated 28<sup>th</sup> November 2013 which outlines the Coal Mining Air Pollution Issues – **Attachment 4**).

In the time allowed for submissions the first pass through the 2014 MTW Continuation Project *EIS* has confirmed that no allowance exists to incorporate the now known Air Pollution Human Disease Risk. That is “There is No Safe Threshold of Air Pollution” with Disease Risk related to “Degree of sudden Rise of Exposure Level above background”.

Thus “Near Neighbours to Open Cut Mining” are especially exposed to Disease Risk.



If anything, there are more of the same methods and evaluations of the type that have attracted Community criticism by CCC Members over the years particularly regarding Air Pollution and Blast Plume Drifting Modelling, Variability of Valley Meteorological Conditions, Year on Year; and the Time Averaging of Air Pollution Data that destroys its Disease Risk Intelligence.

### Note (3) Meteorological Variability

SSHEG is critical of the somewhat selective Meteorological Conditions that have been used for both the Air Quality and Noise Modelling; namely 2012 Met. Data.

*The Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (the EPA Approved Methods DEC2005)* does however place the onus upon MTW to make sure that “Data must be representative of the area in which emissions are Modelled”. In this 2014 EIS it is clear that commercial advantage# has been taken, considering only two of the three DEC2005 conditions, but the third identified above has not been met. Data used needs to represent the likely conditions across the 21 years of operation of Mining.

Coal & Allied – Mount Thorley Warkworth

#### 3.1.2.3 Wind speed and direction

During 2008 the wind direction at the MTW Meteorological Station (Figure 14) was dominated by north-north-westerlies and south-south-easterlies. Wind speeds were strongest (>10 m/s) from the north-north-west and to a lesser extent from the south-east.

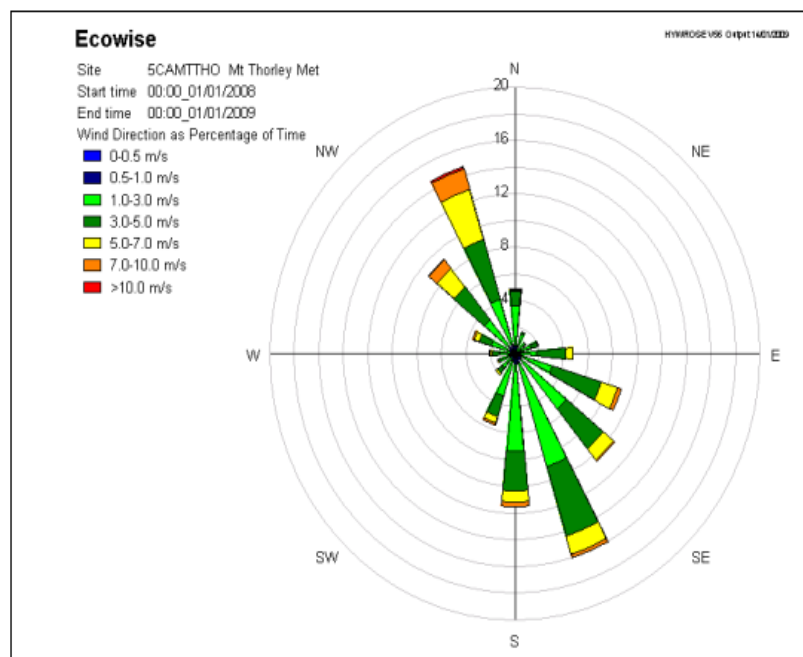
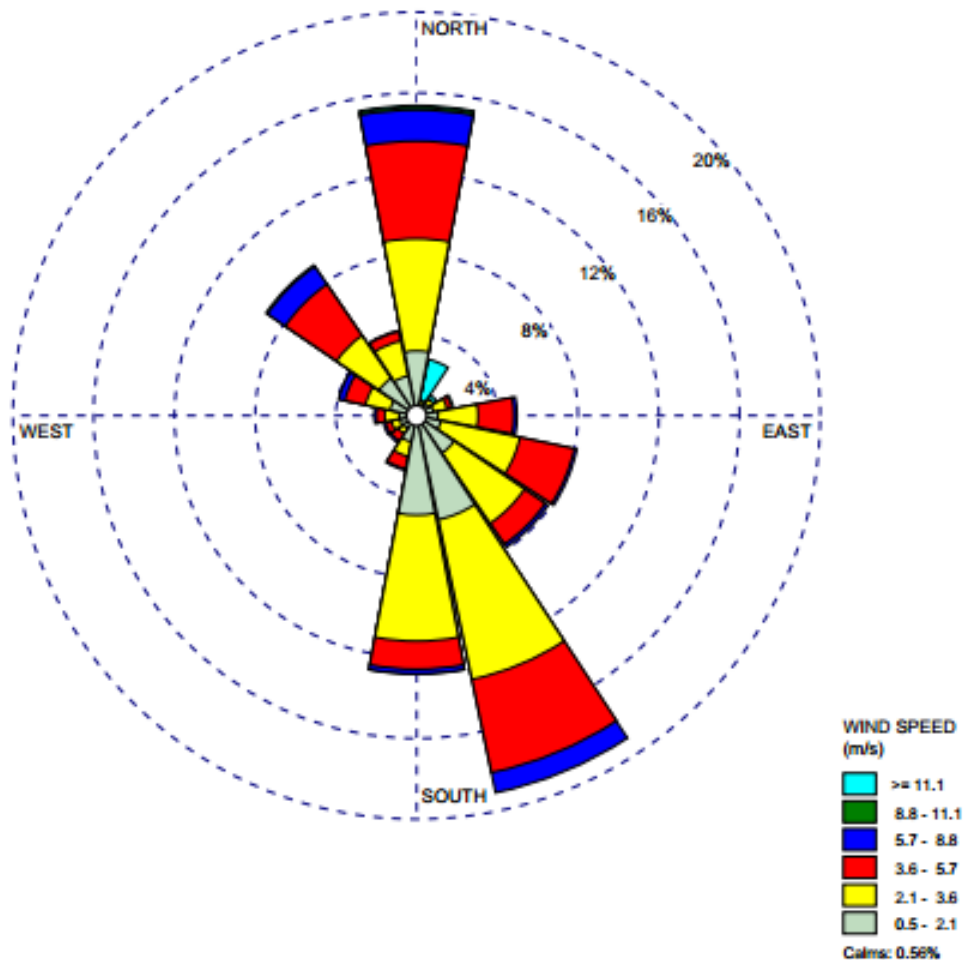


Figure 14: 2008 Annual Wind Rose

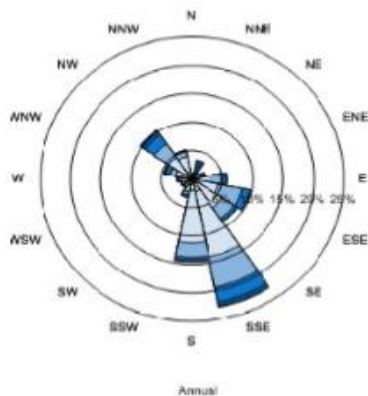


*Figure 2: 2012 Annual Wind Rose*

---

Mount Thorley Warkworth Annual Review 2012

**Note # Also the MTW 2013 Annual Environmental Review Wind Roses Figures 6, 7, 8, 9 & 10 is much more representative of the Hunter Valley, and this clearly is not in agreement with the use of 2012 Wind Roses for 2014 EMM Noise and TAS Air Quality assessments for Bulga Broke Micro Valley Residents..**



### 2014 MTW EIS TAS

### 2013 MTW Annual Env Review

#### Data from MTW Charlton Ridge Met Station

**SSHEG approval is subject** to all 2014 EIS MTW Modelling being redone based upon 2013 and 2008 Met patterns to redress the obvious bias that exists in the current EIS documents. This bias will be evident in the Noise, Air Quality and Blast Plume “Gassings”.

Two different Technical EIS Experts , one in 2010 EIS and the other in the 2014 EIS provides an insight into the limitations that exist in Modelling; that is Modelling is only as good as the Data it is based upon.

The reality is that the Community and especially “Near Neighbours to Open Cut Mining” throughout the last 20 years of Mining in the Hunter Valley report that Air Pollution appears in areas not predicted by EIS Modelling. Review by the Community over the years has identified that the variability of Meteorological conditions, Year on Year, Month by Month, Day by Day, and Hour by Hour needs to take into account the full range of this variability.

By way of example, PAE Holmes for them “Warkworth Extension Environmental Assessment 2010” clearly identifies the Met Data variation for 2006, 2007, and 2008 in Figures 4.1, 4.2 and 4.3, with 2008 used. This compares to 2014 MTW EIS by Todoroski Air Sciences (TAS) using solely 2012 Met Data Figure 4-3.

TAS Figure 7-2 Wind roses from CALMET extract of the 2014 EIS likewise over-represents the North drifting Pollution Patterns as illustrated in Appendix E of G; which if anything identifies that Residents at Jerrys Plains will be impacted. The reality is that North, NW and NNW Patterns are just as dominant in the Hunter Valley resulting in South Drifting Pollution Air Patterns that directly impact on Residents in the Bulga, Broke Micro Valley.

This Met Data Variability is illustrated as follows:-

Jerrys Plains Post Office Met Station No 061086

Bulga Optimisation EIS Met (Patterns 2007, 8 & 9 with 2010 markedly different)

MTW 2003 Met Data for ?

MTW 2010 Met Data for 2006, 2007 & **2008 PAE Holmes**

**MTW 2013 Met Data for 2013 Annual Env. Review**

MTW 2014 Met Data for only 2012 Todoroski

HVO 2005 to 2012 variability

#### **Note (4) \* Noise Mitigation**

The controversial decision to challenge the Community over the removal of “Saddle Ridge” also includes the extraction of the otherwise “sterilisation of approx. 28.6 Mt of ROM coal” on MTO across the Putty road. Besides the technicality that MTO mining lease and Rehabilitation should be finalised with mining to cease in June 2017, a further 21 years of exposed Spoil Heaps in an already overexposed Mine Lease footprint in this Micro Valley perpetuates the challenges to effectively mitigate Air and Noise Pollution, and Rehabilitation..

The Community issue being the intolerable Legacy of Mining Noise from Existing MTW Operations, and existing 2003 EIS Noise Assessments and now 2014 MTO Appendix F and 2014 MTW Appendix F also now predict more of the same. Again the impact of the 2014 EIS Met Data biased towards North Drifting Air movement Patterns is expected to explain how the EIS concludes “The change in Noise from current and approved operations is expected to be marginal for western locations”. (Appendix F 10.5.1 page 72)

However, while the focus in the EIS’s is to identify “Residents with acquisition right” I have not been able to identify which Residents in the Bulga Broke Micro Valley are most likely to continue to experience excessive Noise and that will be afforded Mine Supplied and Maintained Resident Noise Mitigation measures such as Double Glazed Windows etc.

(except as noted in Appendix f 10 page 57 “Finally, controlling noise at the receiver {Residents ?} has been considered and properties {Homes?} have been identified where treatment to existing dwellings would be made available”).

Currently in 2013 Bulga Residents reported around 600 Noise and 60 Blast and Dust Complaints. At this level of Community Noise aggravation after the concerted Mine efforts as outlined in 2014 MTW Volume 1, 4.5.1 page 63 and Chapter 10.4 page 153 etc. it is clear that Noise Mitigation at Bulga Residents with a current 2013 Noise disturbance Legacy are to be offered two additional Noise Mitigation Controls.

- (1) Nightly between hours 10pm to 5am that dedicated Community Noise Response Officer patrol such Locality directions with realtime monitoring to affect operational management of mine machinery to mitigate Noise to acceptable levels.
- (2) Resident Homes with 2013 Noise Disturbance Legacy to be provided with Home Noise Mitigation, Double Noise stop Glass and Bedrooms against Sleep Disturbance, and the like.

SSHEG identifies that the current reliance upon Community Noise Complaints for the Mine to respond, has been an effective short term measure to allow the mines to satisfactorily develop controls that address the Noise Pollution from the Community’s perspective. However it is incumbent now upon the Mines to effectively control the Noise and eliminate the Community Noise Disturbance Aggravation without the reliance upon Community Complaints.



## **Note (5) Heritage Conservation**

Australian heritage in the Hunter Valley has four major historical periods that need to be considered with respect to Heritage Conservation.

- (1) Aboriginal Heritage
- (2) Colonial Heritage 1788 to 1900
- (3) European Heritage 1900 to 1950
- (4) Post World War 2 Multiculturalism and Industrialisation

In considering the impact of these two Mining Proposals and the Mining History and legacy of these Mines, some consideration is warranted to conserve for future generations appropriate Post War Industrial Heritage artefacts by way of objects, records, keepsakes, stories and the like.

It is only in the recent past that a more formal process has been put in place to formally recognise the various Heritage periods as they relate to Hunter Valley lands that is now the subject of Mining Leases. In the 2010 MTW Mining Proposal a detailed Mine proposal for the establishment of a Conservation Zone focusing on Aboriginal Heritage was responsible at least in part for the proposal **Attachment 5** to extend this concept to include the RAAF Airstrip with recognition of the interplay that existed also with Colonial settlements in this same area.

Subsequently 2010 ES Volume 1 section 17.4.2 now also identifies that “*the former RAAF Base is considered to have some national heritage significance*” and as such the two runways are in reasonable condition (one to be impacted) and with similar effort by community groups could achieve results similar to that seen at Evans Head Airstrip. We do not support the demolition of the Kitchen Building or the extensive bitumen Hides and concrete Building foundations etc.

European History for its part has been gathered, collated and assembled with a focus at the Singleton Historical Society and Council Library.

The competing Heritage interest Groups are such, that the proposal identified in MTW 2014 EIS Volume 1 Section ES5.9 Para 4 as “The Mount Thorley Warkworth Historic Heritage Conservation Fund” by its name would relate to many of the long term Heritage Visions and Mine Lease Conservation Area extension as outlined in **2010 Attachment 5**. Such a Heritage Conservation Fund would initially require a Group of like-minded Residents willing to contribute to fleshing out the Vision as a proposal document for consideration.

**The Vision** of a Community Heritage Visitors Centre with guided tours of Aboriginal sites, Bulga Mountain Rock Art, Bulga Pioneer Trail, Colonial Homesteads, Mining exhibitions, and RAAF field days would be a worthwhile Tourism venture moving with the development of the area.

## PART D 2014 MTW SSHEG Submission

### Air Pollution

The predicted cumulative 24 Hr average PM<sub>10</sub> levels assessed at the monitor locations shown in Appendix G Fig 9-1 is an honest method to understand the Air pollution exposure being reported by the Community of the area.

However it also appears that these results are based on 2012 Meteorological Station Patterns which are clearly known not to be representative of either the Hunter Valley or the Bulga Broke Micro Valley. The apology for dismissing even 2013 Met Data SSHEG has been seen before; only to (year by year) see Residents experiencing unacceptable Particulate Matter levels, with authorities continually relying upon Monitoring that has been positioned based on flawed Met data; such as in this case 2012. **What SSHEG contends is Air and Noise Modelling needs to be also carried out for 2008 and 2013 Met data.**

**Figure 9-1** shows the location of each of these monitors in relation to Warkworth Mine and surrounding assessment locations.

Generally, these monitoring locations are representative of the most impacted receptors in the surrounding assessment locations as they are typically located closer to the mining activity and hence are likely to experience greater impacts. The predicted cumulative 24-hour average PM<sub>10</sub> levels assessed at the monitor locations can therefore be considered a reasonable, conservative measure of the potential 24-hour average PM<sub>10</sub> impacts that may arise across the representative assessment locations.

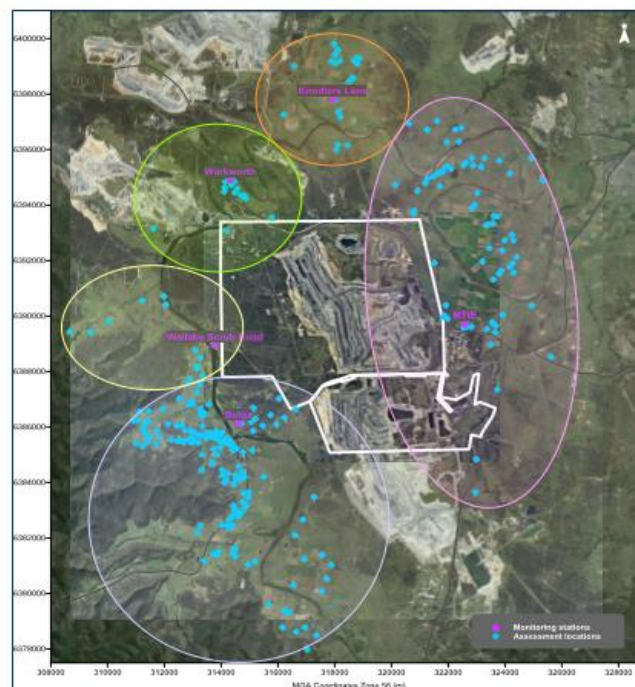


Figure 9-1: Locations available for contemporaneous cumulative impact assessment

14010272\_WW\_2014Project\_140612\_HR.docx

## **Particulate Matter Health Effects**

It is indeed disappointing in Appendix G Section 12 that TAS has chosen to ignore the WHO Pollution Health announcements; first in June 2012 for Diesel Exhausts, and then in Oct 2013 for Air Pollution and Particulate Matter all classified as Group 1 Carcinogens.

However by April 2014 SSHEG prepared details of the Health effects gleaned from the CAR Sydney and Newcastle Symposia in Oct 2013 and this provided many explanations for the of the Human Disease associations with Air Pollution. The complexity of these Epidemiological Cohort Studies are contained in **Attachment 7** which was prepared in May 2014. In view of the limited time to prepare this SSHEG Submission Attachment 7 is submitted in its original form, but clearly the Health Effects from Air Pollution and their association to Human Diseases is detailed along with Research References. (Sample page 11 of Attachment 7 only shown below)

**The Singleton Shire Healthy Environment Group (SSHEG) focus is on Community Health where since 2008 the perception is that Coal Mining and Power Stations are progressively making Residents sick in the Hunter Valley Environs.**

**The Recent September 2013 “Centre of Air quality health Research (CAR)” Symposia in Sydney and Newcastle and the CSIRO PM2.5 Particle Characterisation Study in the Upper Hunter has begun to confirm the relationship between Air Pollution and Residents perceived detrimental health effects.**

**Traditionally, Epidemiology Studies form the body of Medical Opinion to quantify the relationships between Air Pollution and Population Health effects. The fact that populations are exposed to Air pollutants is largely beyond the control of individuals and requires action by public authorities at the national, regional and international levels.**

**While SSHEG contend that the Environment in the Hunter Valley, especially the Air Quality contains Gases, Particulates, Vapours, Fumes, Aerosols, Pollens, etc; and if the Composition, Toxicity, Exposure and related Health effects were understood, then better Mitigation steps could be taken to reduce the Health Risk.**

**The reality at this stage in 2013 is somewhat different, as outlined at CAR recently, clearly establishing that. International Epidemiology Cohort and Toxicology Studies have now in 2013 further quantified since 1993 the range of Mortality and Morbidity related Human Diseases associated with specific Air pollution Particulates Fractions.**

**World Health Organisation in the “Review of evidence on health aspects of air pollution – REVIHAAP” 2013 via its Scientific Advisory Committee and Expert Reviewers outlined much of the Scientific Expert deliberations associating Particulate Fractions to Health effects, both short and long term.**

**Most significantly is:-**

**“There is no safe threshold for Particulate Air Pollution”, with indications from Canada not only confirming long term exposure associations between cardiovascular mortality, with the strongest association with ischemic heart disease with concentrations of PM2.5 as low as only a few microgram per cubic metre.**

**“There is a linear Dose-Response Relationship between Particle Levels and Disease, with No Threshold that is Safe”.**

**This report then outlines the Community Health impact of**

**Appendix G      Section 9.6 -Consideration of Cumulative PM2.5 impacts**  
**Section 10 - Assessment of Diesel Emissions**

The apology outlined in these sections that Coal Mining in the Bulga Broke Micro Valley (**Attachment 2**) is likely to have little impact is not substantiated. On the other hand SSHEG efforts to have Real Time PM2.5 Monitoring added to selected PM10 Mine sites is now warranted by the WHO Oct 2013 associations between both Short Term and Long Term PM2.5 and Human Disease; as outlined in **Attachment 7 pages 11 onwards**, as well as **EPA Nov 2013 Air Pollution and Health**.

However SSHEG has already in this submission outlines the MTW Mines impact on the Bulga Broke Micro Valley and the requirement of PM2.5 Real Time Monitoring at Broke (**Attachment 2**)

**SSHEG contend that PM2.5 Real Time Monitoring (15 Minute STEL Average) both Broke and Bulga areas is a condition of the SSHEG support for the MTW Mines Projects, on account of the WHO Human Disease association of Diesel Exhausts, Air Pollution and particulate Matter.**

- That is:-**
- #      Coal Mining is responsible for around 90% of the PM10 of which say 5% is PM2.5.**
  - #      Mine Blasting Plumes a major contributor to both PM2.5 Dust and Explosives Mix Products including diesel.**
  - #      MTW Mines are a major Diesel consumer.**

Dr Neville Hodkinson PhD

Singleton Shire Healthy Environment Group

- |                     |  |
|---------------------|--|
| <b>Attachment 1</b> | <i>“SSHEG Document March 2014 Mining Pollution Mitigation Priority Action”.</i>  |
| <b>Attachment 2</b> | <i>“Micro Valley Study of Mining coexisting with Residents, Farming, Vineyards and Horse Studs in the Hunter Valley of NSW Australia”.</i> |
| <b>Attachment 3</b> | Report on MTW Blast 20 <sup>th</sup> Sept 2013 BOC Workers “Gassing”   |
| <b>Attachment 4</b> | SSHEG Mod 6 Submission dated 28 <sup>th</sup> November 2013 which outlines the Coal Mining Air Pollution Issues.                           |
| <b>Attachment 5</b> | 2010 SSHEG MTW submission details  |
| <b>Attachment 6</b> | SSHEG Senate Submission March 2013   |
| <b>Attachment 7</b> | SSHEG Submission 28 <sup>th</sup> May 2014   |

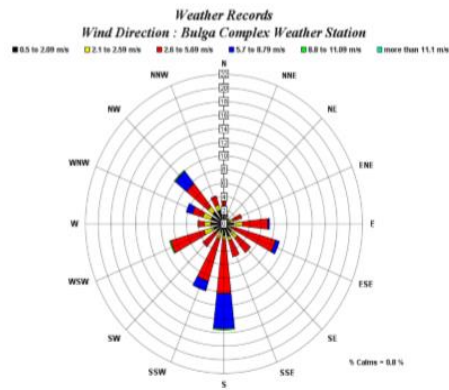




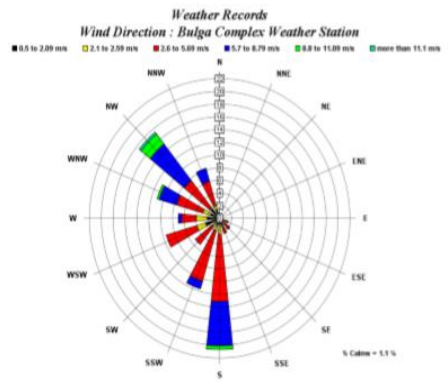
*Blast Plume sucked down slope to Glennies Creek    Slow dissipation over Camberwell*

***Camberwell Gassing Incident 2004    Lethridge St. area viewing North***

April 2012



June 2012



May 2012

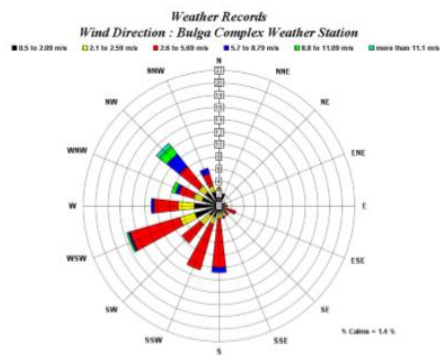
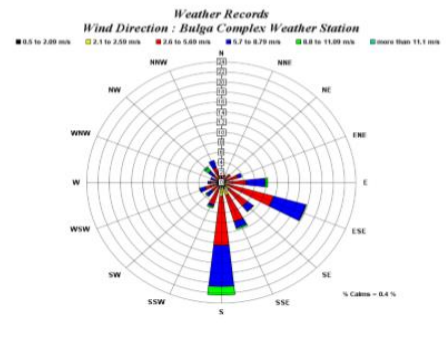
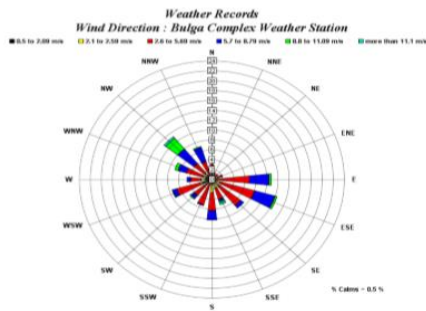


Figure 45 - Windroses for Quarter 4 2012

December 2012



October 2012



November 2012

