

The Proposed McPhillamys Gold Mine HEALTH FACTS SHEET for residents living in Kings Plains, Guyong Road and Surrounds affected by the McPhillamys Gold Mine

In the EIS for the McPhillamys gold mine Hansen and Bailey's (H&B) Social Impact Assessment (SIA) Volume 8 define two areas as being largely impacted by the mine development referred to as the **Primary Assessment Area (PAA)**.

Collectively they are:

Kings Plains Locality - defined as the geographic area that extends from Lynfern homestead on the Mid Western Highway near Dungeon Road, east to Kellys Road and includes the settlement of Kings Plains on Walkom Road), and

Guyong Road and Surrounds - consisting of all land to the west and north of the mine project area i.e. Guyong Road, Vittoria Road and the Mitchell Highway.

The PAA covers the area within an approximate 2 km radius of the mine project.

Health Survey Results

Earlier this year a I circulated health survey in the PAA and nearby (2 residences). The results of this survey are summarised below:

- Number of households surveyed = 37
- Number of residents =106
- Number older residents (over 75) =10
- Number of children = 43

H&B reported a total of 88 residences and 230 people reside in the PAA so my survey respond rate was about 42% of the population.

Distance from boundary of proposed mine site:

100 metres to 1 km = 20 households

1km to 2 kms = 15 households

3kms to 4 kms = 2 households

Of the households surveyed only 11 reported no health issues whereas 26 (70%) of the households listed health issues including:

- Asthma, respiratory conditions and lung disfunction = 25 people (24%) including seven cases of severe respiratory disorders.
- Heart disease and hypertension = 15 people (14%)
- Diabetes = 6 (6%)
- Stress, anxiety and depression = 19 people (18%)
- Other serious health problems and low immunity = 11 (10%)

H&B do not recommend any actions to address the serious health issues, except for regular environmental monitoring.

Blayney Shire Councillors have been made aware of the above figures and hopefully they will show their concern in the council submission to the NSW Department of Industry,

Planning and Environment. (DIPE). A health report will be sent to the NSW Health Department and a submission sent to the NSW DPIE.

McPhillamys Gold Project EIS Social Impact Assessment

In the EIS Volume 8 H&B report as follows concerning PAA residents:

5.5.7 'Key issues of concern for these residents related primarily to dust and the **perceived** presence of harmful contaminants in the dust' (p 97).

6.3.4 'Residents with existing and significant health issues may choose to relocate to avoid **perceived** exacerbation of health issues.'(p168).

Comment: H&B in their social impact statement have made the point several times that the residents of Kings Plains community are in conflict. THIS IS NOT TRUE in fact the mine proposal has brought the community together.

I have noticed in Volume 8 page 196 of the project approval actions chart Regis states a Health Impact Assessment (HIA) has been completed and the residents of PAA have been informed of the results. THIS IS NOT TRUE. When I questioned the Regis consultant she told me she would be working on it in the next month. Why is this assessment being done now after the completion of the EIS and the forwarding of submissions to the DIPE?

An **Action Plan** by H&B lists the following should be undertaken by Regis during the Project Approval process to reduce its potential impact on the health of residents:

- Offer air conditioning and/or double glazing on a case by case basis and on request to residents in the Kings Plains locality.
- Engage in and maintain...evidenced-based and ongoing dialogue with concerned property owners.... based on the results of the EIS to address **perceptions** of uncertainty.
- Operate a comprehensive air quality management system.....
- As required on a case by case basis, provide to households in PAA first flush systems on existing rainwater tanks.
- Ensure residents of the PAA have access to environmental monitoring results
- Once construction proceeds residents must rely on the company's environmental monitoring results for air quality and noise standards and then report complaints when a problem arises. (my summary)

Gold Mines in NSW

The nearest residence to Cadia Valley Operations (CVO) is 3kms from the mine boundary. CVO receives numerous complaints particularly from residents about noise, dust and light emissions. Noise and dust complaints come from Panuara, Errowanbang, Burnt Yards, Triangle Park and Forest Reefs. The main source of this noise is from the processing plant. Dust is the biggest issue at present at Cadia resulting from the drying out of damaged tailings dams.

The Lake Cowal gold mine has a buffer zone of 12 kms. The closest residence is 6kms away from the mine boundary. The township of West Wyalong is 40 kms from the mine. Blayney township is 5 kms from the tailings dam that will be a source of toxic dust from dry parts of the surface.

Pollutants and the Health of the Australian Population

It has been clearly established that the combined effect of light, noise, dust and fumes generated by mining activities over an extended period of time has a harmful effect on nearby populations.

Extracts below are a range of scientific and medical extracts you can use **to support** any health concerns you want to mention in your submission.

The specific pollutants arising from the planned mining operation and the health issues include: dust, blasting fumes, diesel, arsenic, cyanide, sulphur dioxide and light emissions.

Air Quality

Media Release: Doctors for the Environment (6 Aug 2019).

Dr Ben Ewald, a spokesperson for Doctors for the Environment Australia (DEA) says, “The purpose of the National Environment Protection Measure (NEPM) is to minimise the risk of adverse health impacts from exposure to air pollution for all people, wherever they may live, yet the current limits on nitrogen dioxide, sulphur dioxide and ozone in the air allow people to be exposed to levels of these toxic pollutants that can significantly impact their health. Exposure to these toxic pollutants at the limit set out in Australia’s NEPM can lead to a range of serious impacts including asthma, heart disease and lung disease. Even low concentrations of nitrogen dioxide, sulphur dioxide and ozone are impacting on the health of Australians.

The current NSW limits of these gases are set well above the World Health Organisation recommendations”

(Distinguished health experts - Dr Peter Doherty, Dr Norman Swan and others are advisers for DEA).

DUST from the continuous mining - blasting, crushing and grinding of rocks, vehicles movement, blasting, loading and unloading trucks with waste rock, the waste rock dump and tailing dam. There are 11 sources of dust mentioned in the EIS, the worst source being the tailings dam. Other dust deposits that will impact on health - dust on roofs of buildings that transfer water into the domestic water supply; dust on clothes on the washing line and home-grown vegetables and fruit.

Diseases caused or exacerbated by dust include, asthma, emphysema, bronchitis, heart disease and diabetes.

Mine dust and you (NSW government fact sheet)

‘The vast majority of dust from mining activities consists of about 40% of coarse particles and particles larger than PM10 generated from natural activities such as mechanical disturbance of rock and soil materials by dragline, shovel, bulldozing, blasting, and vehicles on roads. Particles are generated when wind blows over bare ground and different stockpiles. Fine particles (PM 2.5) from vehicles exhausts and mobile equipment are also produced at mine sites, though they only account for about 5% of the particles emitted during the mining process.....are mainly from vehicle and mobile equipment exhausts.’

‘Coarse particles of dust (PM10) can lead to a variety of health effects. For example, numerous studies link levels to increased hospital admissions and emergency visits and even death from heart or lung disease. Both long (over years) and short term (hours or days) particle exposure have been linked to health problems.

People who may be more susceptible to the health effects of fine and coarse particles are: infants, children and adolescents; elderly people with respiratory conditions such as asthma, bronchitis and emphysema; people with heart disease; people with diabetes. Some recent research suggests that heart problems such as angina and heart attacks may also be associated with coarse particle pollution.’

www.health.nsw.gov.au/environment

Mine blast fumes and you (NSW government fact sheet)

‘Blast fumes are the gases that are generated during blasting. Some of the gases are toxic and some are not. In terms of health impacts, the critical gases generated are oxides of nitrogen (NOX) - nitrous oxide (NO₂) and nitric oxide (NO). Under certain conditions the gas plume may persist and can affect nearby residents who are downwind of the blast site.

Symptoms from high exposure include: 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.’

www.health.nsw.gov.au/environment

Airborne Pollution and Toxic chemical emissions

‘Too much pollution can pose a health risk to anyone, but whether it is lethal or not mostly **depends on the person’s underlying health status**. The highest rates of mortality are among the elderly, or those who for whatever reason are susceptible to cardiovascular damage. Existing heart and breathing conditions can increase risk. High concentrations of single pollutants, eg particulate material or ozone are more deadly compared to smaller concentrations of many different pollutants. For vulnerable populations, even short-term exposure can be lethal; one exceptionally polluted day can kill a vulnerable person.

Low-level chronic exposure over prolonged periods can reduce life expectancy. On the other end of the age scale infants under the age of one are also extra susceptible.’

Media report by James MacDonald from paper ‘The relationship between Urban Airborne Pollution and Short-term Mortality’ by A Izzotti

Arsenic mine tailings and health (Victorian government fact sheet)

‘Arsenic is often found in gold deposits and is extracted during processing. The waste left over after mining process, the mine tailings, looks like fine sand and commonly contains raised levels of arsenic.

Health effects:

Large amounts of arsenic taken in over a short time can cause severe health effects including stomach ache, nausea, vomiting, damage to blood cells and nerves or even death.

Medium amounts of arsenic taken in over a longer time may cause skin changes, damage to major body organs and some types of cancers.

Arsenic usually enters the body via food and water. Arsenic may be breathed in when it is present in fine dust. In areas with mine tailings you can be exposed to extra arsenic from swallowing and breathing in dust and soil from mine tailings. Young children are more at risk than adults from exposure in mine tailings. Health effects depend on the amount of arsenic taken in and the amount of arsenic swallowed.'

www.betterhealth.vic.gov/health

Cyanide

The production of huge amounts of tailings during the life of the mine is a potential source of heavy metal due to the extraction of low-grade ore. Cyanide will be pumped into the tailings dam with the other toxic slurry. During the processing operation Regis is planning to use stronger levels of cyanide at the Lake Cowal mine near at West Wyalong. A mining expert has expressed fears this higher concentration of cyanide will kill wildlife not to mention the effect on human health when it gradually seeps into the water table.

Diesel Fumes and Gases

Diesel from trucks, bulldozers, blasting and the processing plant will pollute the atmosphere. Diesel is a known carcinogen and can cause respiratory ailments. One of the negative ways that gold mining affects the environment is the release of large amounts of exhaust fumes from heavy equipment and heavy vehicles. One of the 'hot spots' will be at the main entrance to the mine site on the Mid-Western Highway. Vehicle emissions will release a high percentage of nitrogen dioxide into the Kings Plains environment.

'Diesel engine exhaust....contains a mixture of airborne chemicals- CO₂, CO, nitric oxide and NO₂ that are harmful to people. When breathed in these chemicals increase your risk of developing long-term problems - lung and bladder cancer.'

www.cancer.org.au and epa.nsw.gov.au

'High exposure to NO₂ causes illness and disease impacting on a wide range of organs including lungs, heart and circulatory system. There is strong evidence for adverse effects in vulnerable groups including people with chronic disease, the elderly and children'

Expert Position Statement on health-based standards for Australia... Lung Health Research Centre, Doctors for the Environment, Lung Foundation Australia, Thoracic Society Australia and NZ

'Doctors are calling for stronger air pollution standards to limit dangerous pollutants including nitrogen dioxide, sulphur dioxide and ozone ambient air. Air pollution currently causes over 3000 premature and preventable deaths per year in Australia, as well as contributing to asthma, heart disease, lung disease and cancer. Medical group doctors for the Environment is urging the environment minister to tighten air pollution standards to protect health, and to bring standards in line with international best practice.'

Media Release: Health experts call for stronger national air pollution standards to save lives (6 August 2019) Doctors for the Environment Australia

Sulphur Dioxide (SO₂)

About 42% of mine waste rock is described in the EIS as 'potentially' acid forming. There may not be enough non-acid forming waste rock to cover it during the life of the mining operations to prevent it from coming into contact with rain water or an elevated water table situated beneath the waste rock.

‘People living near a hazardous site containing sulphuric acid are at risk of breathing contaminated air - spending time outdoors and exercising increases the risk of exposure to sulphuric acid.’

Acid Drainage Fact Sheet - First National Environmental Health Innovation Health Network

‘Exposure to sulphur dioxide can damage the lungs. People with impaired heart or lung function including asthma are at increased risk. Sulphur dioxide is involved in the creation of acid rain, and secondary fine particle air pollution causes cardiovascular, respiratory diseases, and cancer’

Expert Position Statement on health-based standards for Australia.....Lung Health Foundation Australia, Thoracic Society Australia and NZ, Doctors for the Environment Australia

Mine Blast Fumes (NO₂)

‘Gases produced by blasting can persist in the atmosphere under certain conditions and affect residents nearby or those downwind of the blast site. High levels of NO₂ can cause irritation to the eyes, nose and throat, headaches and breathing difficulties.’

www.health.nsw.gov.au/environment

Noise

The mine noise will be intrusive for residents at Kings Plains for 24 hours a day, 365 days of the year for at least 10 years. Regis is likely to request extensions to continue operation of the processing plant. Cadia, Tomingley and Lake Cowal mines have all applied for and been granted extensions.

There will be noise from warning indicators on reversing vehicles, crushers, grinders, blasting and movement of mining equipment both day and night 365 days of the year. Living in a quiet environment is a lifestyle choice. Noise disturbs sleep. Heavy vehicle warm-up procedures, vehicle movement to and from the mine site, blasting, extracting ore from the pit, removal of ore from pit, processing the ore, waste rock loading and dumping are all noisy operations.

‘Noise monitoring appears to focus on assessing noise from the perspective of contributing to industrial deafness rather than from the perspective of noise as a nuisance which causes loss of amenity. Another weakness of noise measurements is that they focus on levels of noise without regard for the source or type of noise.....the sudden, raucous call of a nearby kookaburra would be louder but less intrusive than a persistent, low level industrial hum.

Heavy mine vehicles and machinery emit very low frequency noise which is not being monitored. This low frequency noise is an important source of disturbance because its wavelength is the type that resonates in cavities such as rooms of houses, the skull and chest cavities.’

Environment Defender Office NSW: Discussion Paper 2011 Key Issues regarding compliance and enforcement page 59

‘Exposure to prolonged or excessive noise has been shown to cause a range of health problems.....continual noise sets off the body’s acute response.....it may be sounds

we aren't aware we're hearing that are affecting us the most, in particular those we hear when we are asleep'

Health effects of the environment noise pollution: Australian Academy of Science

Light:

The mine lighting will be intrusive and have a significant negative impact on the existing dark night sky. The light from vehicles and fixed lighting will have the same effect on the local population as it has on shift workers. Exposure to light 24 hours a day decreases the body's production of the sleep-inducing hormone, melatonin. Insomnia leads to serious health issues - cancer and heart disease. With children poor sleep patterns lead to poorer learning outcomes.

'A key factor in how humans sleep is regulated by exposure to light or to darkness.....Melatonin is a natural hormone made by your body at night. Bright light inhibits the release of melatonin....'

www.sleepfoundation.org

'Melatonin is a natural hormone that regulates sleep-wake cycles. Light decreases melatonin production and signals to the body to stay awake. Lack of sleep can affect your immune system. In the long term this increases your risk of obesity, diabetes and cardiovascular disease'

www.mayoclinic.org

Mental Health

The SIA Vol 8 page 172 states that some residents in the PAA locality are experiencing elevated stress and anxiety levels arising from a range of project factors including:

- Whether the project will proceed;
- The mine life;
- The potential impacts and extent to which they might be impacted
- The ability of Regis to suitably manage or control the impacts;
- The opportunity for property acquisition and/compensation; and
- The potential impact on property values and sale time of property in the locality.

Additional factors noted by health survey respondents include:

- Differing information coming from Regis representatives;
- Constantly revised timetable for commencement of mining activities;
- Owners of properties set up for retirement;
- Long term effects on health, well-being and longevity
- Delaying setting up a business or the future of an ongoing business;
- Left in limbo with uncertainty about the future;

"The primary strategy to manage resident stress and anxiety in relation to the project is for Regis to engage in and maintain transparent, evidenced -based and ongoing dialogue with concerned property owners based on the results of the EIS.' (Vol 8 page 172). A number of residents have already expressed their dissatisfaction with this approach. They are unhappy with the attitude of the Regis management.

I know some of the scientific information on the environmental impacts on health from an industrial development sounds like 'doom and gloom' but why should the health of you and your family be compromised by a project that has the potential to pollute our fairly pristine environment and affect our longevity, not to mention the health of animals and vegetation. The science is out there so we need to fight to maintain our quality of life.

Brenda Leitch
Blayney Health Councilor