



ABN 54 160 243 032

2319 Mitchell Highway, Vittoria NSW 2799

Telephone: 02 6368 7160 Fax: 02 6368 7164

Email: accounts@goldfieldshoney.com Web: www.goldfieldshoney.com

Submitted by Jon Lockwood

As stated by several experts, beekeeping next to a gold mine will result in contamination. On such grounds the project cannot be permitted to proceed knowing it will contaminate a food product, kill livestock, decimate pollinators resulting in a national food security issue and destroy a generational business that keeps its livestock literally over the fence from the proposed project.

Goldfields have base line data provided by the Macquarie University stating what is in the honey, bees, air, and water they drink. If the mine were to proceed, we will be able to prove that our product and livestock have been contaminated by the mine. The mine legally cannot be approved knowing such facts.

Regis and The DPE have not made a genuine attempt to understand the treats or our concerns.

The DPE have recommended that Regis develop a bee monitoring program to work with us. Unfortunately, we do not feel this will work as mines in the local district such as Cadia, have a reputation of doing as they please once permission is granted.

Goldfields have spent hundreds of thousands of dollars on the mine proposal through administration, testing and time. Unfortunately, we are diminished in recourses emotionally, physically, and financially. Regis will not help cover the costs. This is simply a David verses Goliath battle.

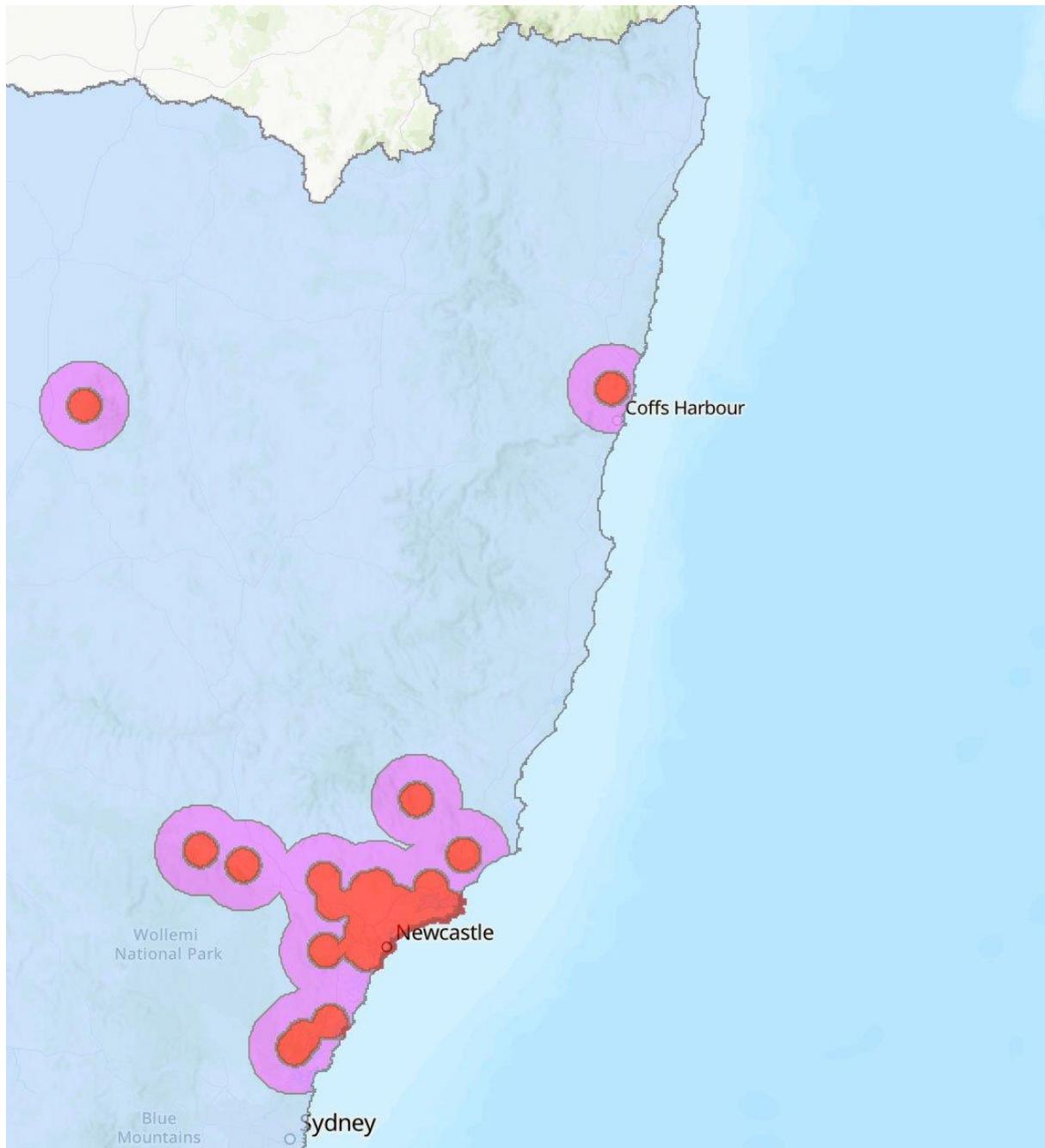
Review of the DPE report:

Section 6.7.3 - The bee Industry

The report identifies 3 key potential impacts being:

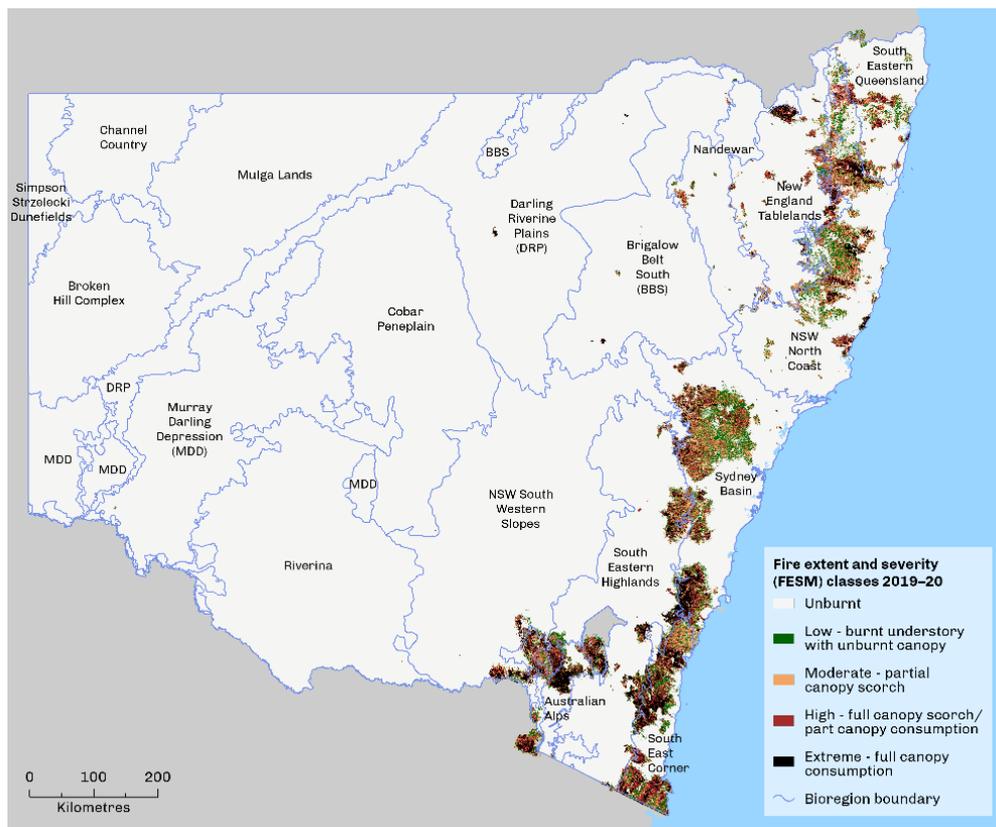
1. Clearing of Box gum woodlands, losing foraging resources for bees
 - The DPE identifies that 21.2 HA of box woodland would be cleared which provide an important source if pollen and nectar. The DPE have recommended that Regis plants 22.2ha of the same trees they will be destroying. We assume this will be in the form of tube stock. The DPE have not commented that the endangered Blakley's Red Gum will be destroyed. They have not noted that only mature trees provide adequate resources of bees. The DPE recommend Regis plant trees to offset what they will destroy but they will not be productive in our working lifetime. Old growth trees are becoming scarce as a result of mining, clearing, bushfires and urban sprawl.

In June 2022 Australia has a biosecurity breach with the detection of varroa destructor, a mite that devastates bee populations. As a result, all bees (18000 hives) have been euthanized and it is currently illegal to keep bees in the 'Red' zone. Bees cannot be taken into the 'Purple' zone. It is unsure how many years this will remain in place. This is creating extra pressure on the recourses in the central Tablelands. See map.



[Varroa Mite Biosecurity Zone \(arcgis.com\)](https://arcgis.com)

The black summer bushfire burnt 5.5 million Hectares. Many burnt bee sites will not be productive for decades. As most honey produced in Australia is derived from Eucalyptus trees resources for bees are stretched.



2. Bee exposure to dust and water that are potentially contaminated by toxic metals and cyanide.

- DPE's report point 451.

“The risk assessment identifies that bees **could** be exposed to metal concentrates from deposited dust in plants, soil and water, or if they are present in nectar, pollen or water they drink”.

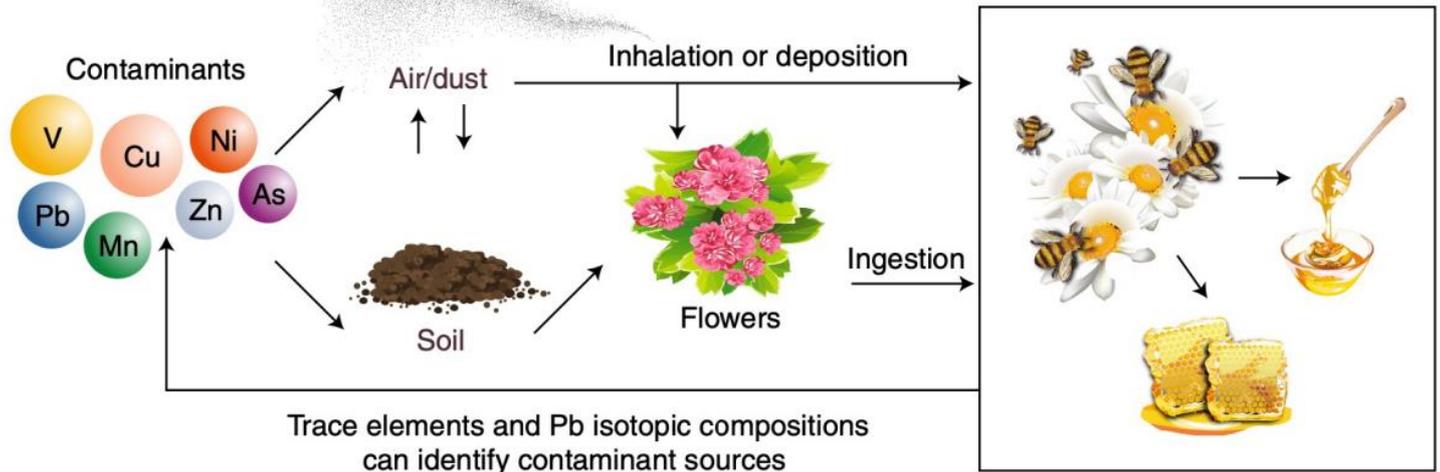
The EnRisk executive summary.

‘Concentrations of metals or cyanide **MAY** be present in water in the tailing’s storage facility are all **ESTIMATED** to be below concentrations that **MIGHT** indicate effects on the survival or health of the bees **COULD** occur’.

Pointed out by Professor Mark Taylor the bees **WILL** get contaminated from the mine. There are no acceptable levels of contamination to a food product and the biological asset itself. Bees cannot identify whether a water source is contaminated, please see link below.

<https://www.biorxiv.org/content/10.1101/2021.06.15.448345v1>

The below diagram was included in Mark Taylor's speech to the IPC in Blayney. It identifies how trace elements from mining contaminate honey.



Interestingly the same diagram is used on page 14 of the EnRisks report. The report states that 'Metals in dust deposited onto plants can also move from the dust into the leaves and into flowers/nectar/pollen.' Commissioners, I strongly suggest that you read the EnRisk report. Regis's own consultant state that contamination WILL occur! I do not understand how the DPE can recommend the project knowing such facts.

(Please see attached notes for Peter Toedter – retired geologist, and DPI Shooting Range contamination Report – the effects on bees)

In dry times bees seek water from anywhere possible, dog bowls, dripping taps, swimming pools, dams even puddles. Under such circumstances bees fly kilometres for water. There is no guarantee that my bees will not drink from the tailings dam. Bees will drink water from the tailings dam.



Observed 12/2/22 in a wet summer. Bees drinking water in a puddle directly next to the proposed mine site in Vittoria State Forest. Note there are full dams and rivers close by, we cannot control where bees collect their water.

In the bushfires of 2020, the state was covered with a blanket of smoke. Even though bees were placed on a flowering event they gathered very minimal pollen and nectar.

They did not create a surplus of honey. The reason for this is that bees use the sun to orientate and get their sense of direction. Due to the smoke and high levels of particulate matter in the air the bees simply stayed in their hive and did not forage. Increased dust from the goldmine will have the same effect on the bees.

<https://royalsocietypublishing.org/doi/10.1098/rstb.2013.0037>

3. The attraction of bees to night lighting.

- Not only have DPE identified the risk but also the Department of primary industries and Goldfields. After several discussions with Regis and the department I feel they simply do not understand our concerns.

In warm summer nights bees are attracted to night lighting. We cannot place hives in close proximity to a house or pull into a Truckstop at night with bees on or the bees fly to the lights. Bees are attracted to night lights because of phototaxis.

This is an OH&S issue because the bees drop from the lights on people and get stung. An individual died several years ago as a result of beestings on a mine site.

[Indus Mining Services fined \\$60,000 over bee sting death at Western Australian mine - ABC News](#)

Regis have stated they will be putting shields on the lights to prevent the bees being attracted. This will not work. You can put a physical shield on the lights, but the bees will still be attracted to the light. I currently have an apiary that will be 200 meters from the proposed mine sites offices. This demonstrates a lack of insight and understanding. I can't help but feel overlooked.

[Bees will become 'disorientated and stressed' by bright lights and noise if mine given the go ahead - ABC News](#)

The department have identified that beekeeping industries play a vital role in the nation's food security. Well, this one I can agree on!

In fact, bees through pollination and honey products directly contribute 14 billion dollars the Australian economy annually. The importance can be highlighted by the recent response to the varroa incursion in Newcastle. The affected parties, including the NSW state government are spending \$200 million to free Australia of a pest that will decimate the beekeeping industry.

[Honey bees - DAFF \(agriculture.gov.au\)](#)

One hand the state government are doing all they can to eradicate varroa and support our industry but on the other hand are recommending a mine that will decimate Australia's largest beekeeping business!

Every August the Australian bee industry supplies the almond industry with bees to pollinate their trees.

This is the single biggest movement of livestock in Australia at any given period. Almonds are 100% reliant on bees. No bees no almonds. Goldfields supply Australian Farming services, at Balranald with all our hives worth 2 million dollars to our company annually.

According to my calculations Australian Farming Services have:

- 2500Ha of almonds under plantation.
- Almonds are worth approx. \$24000 AUD per tonne.
- 3.2 tonnes of almonds are produced per HA
- This is worth approximately 60 million AUD to the Australian economy annually.

This is just one crop that we pollinate.

I simply cannot comprehend why we are considering a gold mine that will put this in jeopardy.

Offset sites for beekeepers

In the DPE report it states that beekeepers and mining can co-exist. In the next breath the DPE are speaking about offset sites for beekeepers! I am confused commissioners, why are we being offset if we can co- exist?

Regis has offered us the property "Azeil" to offset our resource in Vittoria State Forest. At the time we pointed out to Regis that 'Azeil" is biodiversity stewardship that prohibits commercial activity and in fact prohibits bees as they compete with native fauna. The DPE have asked Regis the same question in their report.

Am I to assume that my leases in the forest will be revoked or not renewed in time? Is it legal for the state government to take away such vital resources from me and the beekeeping industry because of a new neighboring project?

WE DO NOT WANT TO BE SHIFTED!

To me the answers are unknown as I have not been consulted.

I would like to touch on a phenomenon called colony collapse disorder (CCD). [Colony collapse disorder - Wikipedia](#)

In 2006 the United States reported losses of up to 90% of their bees. The issue was taken so seriously that the pentagon was investigating an attack on the US food security. This sudden spontaneous death is still happening around the world. The best minds in the world have been working to come to a conclusion. No one cause can be identified, rather a collective group of stresses and factors that result in their demise.

Bees are a sponge to our environment. Pollutants such as dust and contaminated water inevitably end up in the hives. Stresses such as night lighting, vibrations and not being able to orientate due to dust takes it toll.

Regis and the DPE claim that all indicators will be within legal 'limits'.

Truth be told, no amount is safe for bees, there is no acceptable 'limit'.

(Please see attached below Bee Missionary – Bee Informed – Bee News)

After my speech to the IPC, Jim Beyer, Regis CEO approached and said that we needed to talk and that a lot has been missed by Regis. There is an internal issue between the Regis office in Blayney and Western Australia. The Regis board of directors were under the impression that the details of the mine had been taken care of. They were shocked to find out the truth in the hearing. The project is being watched closely, concerns have resulted in Regis's share price to plummet by 14% over the last month.

As an Australian citizen I am appalled that our government have recommended this project. The entirety of assessment is flawed and the attitude of the DPE disgraceful. This was confirmed with the final presentation to the IPC in Blayney. I assumed Clay Preshaw would have personally attended the three days in Blayney. The fact that the top man from the DPE, who signed off on the approval, arrived moments before his presentation, stood before the IPC with nothing prepared was a direct insult to the community and in fact the commissioners themselves.

CONDITIONS

To recommend conditions is a painful thought, as we are unable to imagine our lives if the proposed mine were to proceed. We do not want to profit from the project, rather be left alone to continue our lives and businesses. At the same time, we need to protect ourselves.

1. All premises within 3 kilometres of the mining lease boundary are applicable for VLAMP.
2. A guarantee that all leases for bee sites in Vittoria State Forest and adjoining Local land reserve will not be denied by any party due to the mine.
3. A guarantee that honey and its associated biological asset will not vary in its current natural state in accordance with clear policy guidelines and criteria.
4. Goldfields Honey Australia keeps its bees in the Vittoria state forest, adjacent to the proposed mine. Goldfields Honey Australia will be exempt from the NSW Government "Investigation of Nuisance Bee Complaints Policy" ... see below.
5. The tailings dam must be netted with appropriate material to avoid bees drinking the water.
6. All night lighting must be red in colour so no bees are attracted.
7. After the 12-year life of the mine, all tailings must be transferred to the pit to avoid future contamination to honey and its associated biological asset.
8. If the mine is found to contaminate honey or bees, disrupt production or any business proceedings, Regis must purchase the 'Goldfields' group of businesses and all associated assets at an agreed price.
9. Dust and noise monitors are to be placed at 2323 and 2319 Mitchell Highway, Vittoria and all costs are to be covered by Regis.
10. Electric machinery is only to be used for construction and operation to minimise noise.



Investigation of nuisance bee complaints

POLICY NUMBER: IND-O-POL21/2	VERSION: 1.0
AUTHORISED BY: Director, Compliance & Integrity Systems	AUTHORISED DATE: 20/05/2021
ISSUED BY: Compliance & Integrity Systems	EFFECTIVE DATE: 25/06/2021
CATEGORY: Operations and Industry	REVIEW DATE: 25/06/2024

1. Purpose

This policy outlines how the Department of Primary Industries (the Department) will investigate nuisance bee complaints and ensure that standardised compliance actions are consistently applied. It does this by:

- Outlines the investigation process
- Determining what is a risk to public health
- Determining what is a risk to public safety
- Determining what medical evidence is required to implement compliance action

2. Scope

The Biosecurity Act 2015 (the Act) allows for action to be taken if bees are hived (i.e. kept in a bee box), and under some form of management by a person are found to be:

- A danger to public health, or
- A danger to public safety

The Department does not have a legal responsibility to manage any threat or nuisance caused by feral colonies, such as bees in a tree or bee swarms, and will not investigate these matters.

The Department will assess reports of bees causing a public nuisance against the requirements of the Act and the Australian Honey Bee Industry Biosecurity Code of Practice.

Reports of nuisance bees from an individual or a small number of neighbours does not constitute a public nuisance and the Department will only take action if a risk to public health or public safety is proven.

3. Outcomes

3.1 The investigation process

An authorised officer will investigate all nuisance bee complaints to determine if there is a risk to public health and safety. Part of this assessment will include:

- If the beekeeper is registered under the Act,
- If a person with a serious bee allergy to bee venom is likely to be exposed to bees,
- If the beehives are in an appropriate location, away from the areas identified as high risk,
- If the bees are aggressive and poorly managed,
- The disease status of the beehives,
- That the beehives are appropriately constructed and branded,
- That the beehives are regularly inspected for pests and disease, and
- Whether the beehives are exposed or neglected

The outcome of the investigation depends upon the outcome of the assessment by the authorised officer as well as the specifics and nature of the complaint

3.2 Determining a risk to public health

Beehives are considered to constitute a risk to public health if they are located in the adjoining premises or within close proximity of a person with a serious allergy to bee venom, or a person with a serious medical condition, that will likely result in hospitalisation or death if stung by a bee.

3.2.1 Medical evidence required to implement compliance action

In cases where a complainant has a medical condition that would result in a risk to public health due to the location of a bee hive/s, the Department is required to sight medical evidence to enable compliance action to be taken to remove the public health risk. The Department will consider the following medical evidence when determining if a public health risk is present:

- A specialist report confirming a person has an allergy to bee venom
- A medical certificate stating if a person is stung by a bee they will develop anaphylaxis¹
- A medical certificate stating a person will have a serious medical reaction if exposed to bee venom which is likely to result in hospitalisation or death if stung by a bee

¹Anaphylaxis – "Anaphylaxis is a potentially life threatening, severe allergic reaction and should always be treated as a medical emergency. Not all people with allergies are at risk of anaphylaxis." (ASCIA, *Anaphylaxis*, 2019)

3.3 Determining a risk to public safety

Beehives may be a risk to public safety if they are located in the adjoining premises or within close proximity to premises identified as high risk, including

- Schools
- Childcare centres
- Public swimming pools
- Hospitals
- Nursing homes/aged care

4. Related procedures

Procedure - Biosecurity undertaking

Procedure - Biosecurity directions

Procedure - Seizure of Things under the Biosecurity Act 2015

5. Legislation

Biosecurity Act 2015

Privacy and Personal Information Protection Act 1998

6. Revision History

Version	Date issued	Notes	By
1.0	25/06/2021	New policy developed in response to the <i>Biosecurity Act 2015</i> .	<i>Manager, Regulatory Operations Unit</i>

7. Contact

Manager, Regulatory Operations Unit

1800 680 244



Department of Primary Industries

20th November, 2015

Attn: [REDACTED]

Re: Shooting Range Contamination

I have read the 4 documents that you emailed on the 11th November:-

- Lead contamination in shooting range soils, CRC Care case study. www.crccare.com
- Lead contamination in shooting range soils from abrasion of lead bullets and subsequent weathering. Hardison, Ma, Luongo and Harris (2003) Science of the Total Environment 328, 175-183
- Contaminants at a shooting range: Toxicological and Nutritional significance to birds and mammals. Gonzalez (2003) Master's thesis. Virginia Polytechnic Institute and State University.
- Distribution and availability of metals of metal contaminants in shooting range soils around Australia. Sanderson, Bolan, Bowman, Naidu (2010). 19th World Congress of Soil Science, Soil Solutions for a changing World.

I draw your attention to the Australian Honey Bee Industry Council (AHBIC) quality assurance program B-Qual. In the approved supplier program handbook (1.0) page 42, within the Appendix 1, Approved supplier program standards under Apiary Sites. *Placing apiaries near rubbish tipsis avoided.* Part of the reason for this statement within the program is to avoid potential honey bee pathogens that may be associated with waste or discarded honey. An additional purpose is to avoid bees foraging for water on such sites and bringing contaminates materials back to the bee hive.

Honey bee colonies collect nectar, pollen, propolis and water. While the potential for contaminated pollen and nectar is possible, the foot print of the affected area is likely to be small compared to the foraging range of field worker honey bees. It is fair and reasonable for field worker bees to forage four kilometres from their hive in favourable weather conditions. This is the equivalent of 50 square kilometres of foraging range.

Water on the other hand is gathered in close proximity to the hives, usually within 300 to 500 metres. Honey bees may collect as much as a litre on a hot day per hive. Water gathering is more or less a constant activity by field bees. When



temperatures reach or exceed the high thirties all the available field bees are dedicated to collecting water. The water is returned to the hive and distributed throughout the combs. Resident bees by their fanning actions move air throughout the hive and in so doing create a cooling effect from the evaporation of the water distributed in beeswax cells.

Thus the quality of the water collected by field bees may have a direct impact on the potential for contaminants to enter the bee hive. In so doing they are likely to find their way into subsequent honey crops harvested from these hives. The European Union have only recently placed a maximum level for lead in honey of 0.01 ppm. This is now considered the defacto MRL for lead in Australian honey.

If your apiaries are likely to actively collect water from run off ponds from the shooting range then there is a possibility of contaminants finding their way into your harvested honey. I suggest you monitor this risk very carefully and consider consulting with the Environmental Protection Authority, the National Residue Survey people in the Federal Department of Agriculture and the Australian Honey Bee Industry Council.

Dr. Doug Somerville
Technical Specialist, Honey bees
NSW Department of Primary Industries

Ph: 02 48243732
0427 311 410

Peter Toedter – Retired Geologist

Batchelor of Science NSW – Newcastle

Diploma in Natural Resource Management

ORANGE NSW

BEES.

Appendix D – Bee Assessment.

7.2 Dust Deposition.

The modelling carried out for the study on dust is depends on information given by Regis in the EIS. Of the eleven sources of dust listed the source given the least prominence is the tailings dam. This is the source closest to you.

It is fortuitous, or miraculous, that the dust does not go past the lease boundary. The modelling used by the consultants to predict the extent of the dust may be state of the art, but the resulting predictions depend on the initial conditions that are fed into the model. As far as I am aware the initial conditions for the tailings dam were provided by Regis.

The dust from the tailings is not normal country-side dust but consists of ground up ore (silica, metals and metalloids). The additional salts from imported processing water and process chemicals is totally overlooked and not factored into the studies. They will be an intimate part of the dust and should be accounted for.

Also Regis has not taken into account the dust generated from the pre-stripped tailings pond embankment area which has to be done in advance of the tailings. This will be a large bare earth area around the circumference of the dam which will generate dust.

There is also no allowance made for the dust generated between the time that the processing has been completed and before the dam surface has been covered with rock, subsoil and soil. Even during the rehabilitation and before grass cover is established there will be a lot of dust generated, possibly for years, depending on rainfall, that dust has not been taken into consideration.

I did not notice if they considered the direct effect of the dust on bees. Do the bees ignore the dust or do they stay near the hive in dusty conditions?

7.3.2 Water. Page 36

Where the Bee Study works out the effects of dust falling on water in farm dams they only use the dust falling straight on the surface. They state that *"The concentration in a water body depends on the deposition rate of dust and the size and depth of the surface water body"* and on the next page say that they used a "standard" pond of 1 Ha, 15cm deep.

They don't factor in the dust washed in by rain on the dam's catchment which is many times larger than the dam surface. This will greatly increase the metal pollution in the dam.

7.5 Calculation of exposure in tailings.

The metal concentrations in the tailings water are taken from table 4.14 Appendix G of the EIS, page 40. **4.6 Tailings liquid fraction.** The results understate the actual salts in the tailings water as they don't count the extra salts contributed by the imported brine-colliery water mixture or the processing chemicals.

They claim that the tailings water would be diluted by rain. That is virtually negligible as it doesn't rain that much or often, and the tailings water is recirculated continuously to process the ore. It is much more likely that evaporation will concentrate the salts.

They say "these metals result primarily from the treatment of the ore and are mainly present as insoluble salts". That to me is a nonsensical statement as they are in the tailings liquid fraction which by definition means that they are soluble.

Their statement that if the bees drink from the tailings or other storage facilities they will contain concentrations lower than reported in table 15 is wrong because of both evaporation and because they ignore the other sources of salts as stated above.

7.5.2 Cyanide (page 47)

The whole exercise is made useless by their own admission that *"there is no information available in the scientific literature about the sort of concentrations of cyanide in water that might cause impact to bees"*.

You can't just substitute another element such as cadmium and then go on to say that the effects from cyanide would be the same.

The statement that "much of the cyanide in the tailings storage facility will react with some of the metals to form insoluble salts. These salts settle out of the liquid tailings onto the base of the dam" This is nonsense as cyanides are soluble.

In the EIS Regis states that free and weak acid dissociable (WAD) cyanide levels will be reduced to less than 30 ppm and in the same section say that 30 ppm will be achieved. It is important to know if 30 ppm is an average value or the maximum value and over which time span. If it is the average then it follows that the level can exceed 30 ppm as there would be equivalent lower periods.

The Cowal Gold Project at West Wyalong, which is of a similar size to the proposed McPhillamys Project aims to have WAD cyanide levels not to exceed 20ppm average over six months and a 30ppm maximum limit at any one time. That level may be more appropriate to preserve wildlife.

However as the consultants for Regis say **Appendix D, Bee Assessment** they could not find any studies of cyanide effects on bees (other than to note that in Canada cyanide is used to kill bees) so who knows what 30ppm will do (30ppm = 30g per 1,000 litres).

BEES POTENTIALLY THREATENED BY GOLD MINE PROJECT

by Katy - Bee Missionary March 17, 2021



Will bees get disoriented and stressed from the mine's bright lights and noise?

The choice seems to be gold nuggets or liquid gold, also known as honey. Or can both co-exist in peace without harm?

This is the choice a community is faced with at Blayney, in central-west New South Wales, Australia. The proposal has somewhat divided the community temporarily on several fronts, including what the mine might do to the surface and ground water as well as contamination risks and potential adverse effects on agriculture and property values.

Vicki Lockwood is owner of the bustling Goldfields Honey, which is one of Australia's largest beekeeping businesses. She has over 10,000 hives with as many as 60,000 bees in any one hive. That's a rough total of nearly half a billion bees!

Vicki has been beekeeping in this area for over twenty years and has kept hives on some state forest property that backs up onto an area that has become controversial recently. Her bees literally live in pristine conditions in the forest. Bees, like humans, need darkness and quiet at night to sleep.

This unrelated 12:03-minute video by *ABC Australia* is worth watching, it highlights Australia's queen bee breeding program on Rottneest Island, the longest running anywhere in the world.

This area is looking at a proposed gold mine development. The \$415 million McPhillamys Gold Project at Blayney would bring the construction of an open-cut mine and tailings dam on farmland. Once operational, it could process over 200,000 ounces of gold every year for the 10-year lifespan of the project.

Vicki and her crew at Goldfields Honey are very concerned about the impact the mine may have on their bees. A great concern is that the bees might fly into the bright light, and along with the noise and dust, millions of bees might get stressed and disoriented. This could cause bees to get lost, and then they would not find their way home to their hives and they would perish.

Mrs. Lockwood is calling for more studies on the effect of mine projects on bee behaviour. For instance, would the noise and vibrations emanating from the mine interfere with the queen bees' mating, which ultimately impacts the survival of the hives. This could very well put their queen bee breeding program at risk. There are huge implications about possible impacts but not much solid research.

Given the severe struggles and difficulties Australian bees have experienced following the droughts, bushfires and floods, special attention should be given to this dilemma to ensure the mining operation will not harm the bees.

So far there is only a small amount of research on the impact of mine developments on bee behavior. New research into the effects of light, pollution and noise on bees is needed.

And then there is the possibility that the bees would fly into the mining area and sting workers, some of whom could suffer an allergic reaction to the stings.