NSW GOVERNMENT | Department of Primary Industries

OUT20/11606

2 October 2020

Dr Mandana Mazaheri
Team Leader
Department of Planning, Industry and Environment
Via Major Planning Projects Portal

Dear Dr Mazaheri

Response to the Submissions (RtS) and Amendment - McPhillamys Gold Project (SSD 9505).

Thank you for the notification of the RtS and Amendment of the proposed McPhillamys Gold Project on 8 September 2020. NSW DPI is pleased to see a number of our earlier recommendations adopted, and the inclusion of other initiatives in relation to agricultural resources and land use in the amended proposed project.

There remains a number of areas where the Agricultural Impact Statement (AIS) should be strengthened in line with the Strategic Regional Land Use Policy Guideline for AISs (Re-issued October 2012) and AIS technical notes: A companion to the AIS guideline (April 2013).

DPI's recommendations are attached and aim to ensure:

1. the physical impacts of the pipeline on agriculture are appropriately considered and mitigated;
2. that the impacts on local and regional employment on affected agricultural industries and enterprises are investigated and addressed;
3. the apiary industry is considered during the mine operations.

Should you have any questions in relation to this response I have asked the Ms Mary Kovac be available to answer your enquiries. Ms Kovac may be contacted on 02 6881 1250

Yours sincerely

C. Tumney

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DPI Agriculture recommendations – McPhillamys Gold Project (SSD No 9505)

Mine Rehabilitation

We note that the recommendations made in our previous correspondence have been addressed in relation to final mine rehabilitation. We have no further concerns in this regard.

Potential Impact on European Honey Bees and Local Honey Production

Loss of Box Gum Woodland

It is noted from pages 301-303 of the RtS that there is proposed to be a 1.68% reduction in Box Gum Woodland. While it is commendable that a significant area of Box Gum Woodland has been retained Box Gum Woodland is increasingly cleared and fragmented in NSW and its ongoing, intact presence underpins the viability of the Australian beekeeping industry which pollinates 2/3's of agricultural crops.

Ideally revegetation would not result in a loss of this community and would include an identical species mix with provenance from the surrounding species. It is worth noting that Box Gum Woodland trees of primary importance to beekeeping may not come into full pollen and nectar production until 20 years from planting.

Proposed Apiary sites

Rarely are displaced apiary sites replaceable with new proposed apiary sites that are "like for like" in productivity compared to existing apiary sites comprised of established, mature forests. The access to apiary sites offered to Cottesbrook Honey on Regis owned land would need to be assessed for beekeeping suitability by an independent party as part of the commitment to the apiary industry (Section 2(b) Landscape Values of AIS). If these sites are not suitable negotiations should occur with affected beekeepers.

Light mitigation

Section 19.9.4 of the EIS addresses the issue that bright lights at night attract bees. In addition to impacts on the Beekeepers Inn, there are two beekeeper operations likely to be affected in Vittoria State Forest on the Eastern border of the McPhillamys Project area.

it is recommended that a revised assessment assesses the potential impacts of night lighting of the project area on The Beekeepers Inn as well as on the two neighbouring apiary sites in Vittoria State Forest. (where bee hives are located on these paid sites, they will be attracted to bright lights at night resulting in Regis Pty Ltd staff WHS risks and conversely creating a honey bee welfare impact).

This will assist with determining how bee activity in the area is impacted resulting in Regis Pty Ltd staff WHS risks and creating a honey bee welfare impact.

Heavy Metals

Appendix D notes the potential impact of heavy metals on bee health. If mining commences, testing should be continued quarterly for the 15 year project period. It is known that long periods of dry weather make heavy metals and minerals more available in the environment. The region in which McPhillamys Gold Project is located is prone to long periods of dry weather, thus increased availability of heavy metals and minerals should be expected. After a period of prolonged dry, when a heavy rain event occurs groundwater bores should be tested for antimony and arsenic levels to compare with pre-mining samples and any quarterly samples taken preceding the heavy rain event. The following recommendations for a monitoring program to assess heavy metal impacts on honey bees and honey processing is presented in Table 1 below.

Table 1. Monitoring Program to assess heavy metal impacts on honey bees			
Contaminated medium	**Sample location**	**Frequency**	**Testing parameters**
Dust	Surface soil sample from location where hives will be placed	Prior to commencement of mine construction and then quarterly	Heavy metals
	Dust sample from inside factory, e.g. floor, window ledges, tops of cupboards	Prior to commencement of mine construction and then quarterly and after any dust storms	Heavy metals
Groundwater	Bore water sample from Goldfields Honey factory (if available) or from nearby bore	Prior to commencement of mine operation and then quarterly and/or after heavy rainfall events	Heavy metals, antimony and arsenic.
Surface water	Rainwater sample from roof of honey factory	Prior to commencement of mine operation and then quarterly	Heavy metals
	Sample from surface water puddles near location of bee hives	Prior to commencement of mine operation and quarterly and/or after heavy rainfall events	
Honey	Honey sample from bee hives on site (composited sample of 10% of hives)	Prior to commencement of mine operation and then with each honey harvest	Heavy metals
	Honey sample from packaged honey inside factory	Prior to commencement of mine operation and then quarterly	

Symbio laboratories or ALS are two suggested, domestic labs which can test for metals in the mediums listed above. Processing charges will depend on the range of contaminants being tested.

Symbio Labs: https://www.symbiolabs.com.au/environmental-testing/

ALS: https://www.alsglobal.com/en-au#services-section/services-detail.

Impacts on other bee species

This DPI response primarily has focussed on honey bees as an industry and the potential direct impact to that industry. In addition to honey bees, non-honey bee species in Australia contribute a vital, free ecological service on both private (agriculture) and public (i.e. – State Forests, National Parks, Conservation Reserves, TSRs, Crown Lands, etc.) lands through pollination of both native and non-native plants. Assessment of effects of heavy metals in nectar, pollen and water on larval stages of non-honey bee, bee species should be considered. The reference from Lucchetti et al. 2018 points to the vulnerability of larvae of

non-honey bee species, of which Australia has 1600+ known, to exposure of contaminants in nectar or pollen due to their method of feeding larvae pollen and nectar directly, in contrast to that of honey bees.

Section 7.5.1 on page 45 of this report notes "assessment of exposure of the bees via water from the tailings storage facility or other surface water bodies on the site will only be considered for adult bees" citing honey bee larval feed as reducing secondary metabolites by means of its production from the primary source; pollen. The supporting literature (Lucchetti et al. 2018) however, notes "honey bee larvae directly consume only small amounts of pollen containing secondary metabolites, since most of the diet is composed of jelly that is secreted by nursing bees. In striking contrast, the larvae of solitary bees and bumblebees feed on a mix of pollen and nectar and, hence, they are more directly exposed to the secondary metabolites of pollen. We therefore hypothesized that the production of nursing jelly may protect honeybee larvae against exposure to plant secondary compounds."

A scarcity of research into heavy metals in the environment allows risk assessors to rely on toxicity for adult honey bees primarily at the peril of other bee species whose larval feeding methods provide direct exposure to plant secondary compounds and contaminants. Should the project be approved, a regular regime of screening and public reporting of concentrations of heavy metals of concern in the tailings storage facility should be adopted.

Water Supply Pipeline

The information provided in the AIS Water Pipeline (Appendix V) provides a well-documented approach to dealing with the soils that will be encountered in its corridor.

In relation to the construction phase the approach described is sound. We recommend the following to mitigate impacts on cropping:

- Where the trench traverses an area of cropping land the pipeline must be laid to the maximum depth. This will minimise the risk to the pipeline and farm infrastructure if the area is deep ripped etc.

In relation to rehabilitation we recommend the following;

- Initial irrigation with a water truck may also be considered depending on the site, seasonal conditions and land use in areas of seeding to maximise germination and groundcover establishment.

- As part of the monitoring, consultation with the landholders and photographic evidence be compiled. This will assist with evidence for final land restoration if and when pipeline removal is undertaken on mine closure.

Impacts on local and regional employment for affected agricultural industries and enterprises

It is recommended that Regis be required to document feasible options to avoid, minimise or mitigate potential adverse impacts on the local agricultural workforce and to specifically:

- describe the "local labour recruitment practices and rates" that Regis will implement, including the percentage of recruitment to be drawn from the local agricultural workforce;
- estimate potential impacts on agricultural support services, processing and other value-adding industries, and agricultural tourism enterprises, due to agricultural workers being employed by the project; and
- describe recruitment scenarios, including the percentage of recruitment to be drawn from the local agricultural workforce.