

Planning and Assessment
Department of Planning, Industry and Environment
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SUBMISSION

Date: 10 July 2020
Name: Jayne Bentivoglio
Address: Rylstone Olive Press, Tarmons, 25 + 190 Mossy Rock lane, Monivae NSW 2850

Applicant – Bowdens Silver Pty Limited
Application Number - SSD-5765
Application – Bowdens Silver Mine

I object to the BOWDENS SILVER MINE proposal.

I declare I have not made a reportable political donation in the previous 2 years.

Jayne Bentivoglio

I would like my submission to be anonymous.
I request that you please withhold my name, do not publish my name on your website and remove my name from any documents that are already published on your website.

Executive Summary

I live at Monivae and have commuted between Sydney and Monivae since 1997, 23 years. We have moved to Monivae for the rest of our lives from 2020. I am 64 years old and my husband is 69 yrs old. Our children are married with babies and toddlers from 3 months – 6 years. They visit us up here regularly and one son and his family help with harvest and processing when we require extra shifts with large harvests from our grove and other olive groves. I have a son with Limbic Encephalitis who will not be able to visit us at his family home due to the risk of lead poisoning from the dust deposition on himself.

We bought 125 hectares of unimproved land here in 1997 and after Prof Shimon Lavee Olive Expert from Israel came to our land we established Bentivoglio Olives in 1997 and Rylstone Olive Press in 2000. We planted 8,000 olive trees in 1998 and 2000 which are now fully grown. Barnea, Picual, Manzanillo, Correggiola, Frantoio, Leccino, Coratino and Pendolino. 4000 are under drip irrigation and 4000 are dryland. The grove is approximately 4.5km from the Bowdens Silver Lead Mine and we are approximately 60metres higher altitude than the waste rock placement mound in Bowdens Map at 670m. We are situated directly South West of the Mine and the pit 1.0km long by 750m wide and waste rock emplacement area which is 1.6km long x 750metres wide. Our grove, home and Rylstone Olive Press is also approximately 130 metres higher than Bowden's Southern barrier. We are also 150 metres above the Bowden's noise barrier shown around their Waste Rock emplacement area. We are also approximately 190 metres above to top edge of the Bowden's open cut pit.

If the EIS is approved and Bowdens sell to another entity for mine production for the 16.5 years they state, Lead and heavy metal dust will contaminate our softwater catchment, bore water is already at a trickle stage and that will be non existent. Heavy metal dust deposition on all our trees will contaminate any olive oil production. Heavy metal dust deposition will coat the leaves, flowers and fruit. Heavy metal dust deposition on the leaves will stop photosynthesis, therefore, the trees will fail to thrive.

Our processing of extra virgin olive oil is a cool extraction process of washing, crushing the fruit, malaxing the pulp at temps <27 Deg centigrade and centrifugal extraction of the olive oil. There is no refinery process used in the extraction of olive oil. It is a fruit juice only. We recycle olive washing water and re-use this water to foliar spray fertilisers over the season. We recycle the olive husk and olive vegetable water and compost this at correct temperatures and place the compost back on the trees as fertiliser.

To produce extra virgin olive oil, there are strict controls with processing, storage, labelling and bottling from Codex, the IOOC and our own Australian Standard.

The oil must be certified with a FFA <0.8 and be organoleptically assessed by the mean measurement of 8 qualified certified tasters in a blind tasting at the Department of Agriculture Wagga Wagga Sensory Panel. We cannot claim our oil as extra virgin olive oil without adhering to these standards.

The Codex Alimentarius Standard and IOOC Standard for olive oil both show limits Fe 3mg/kg and Cu 0.1mg/kg for refined furnace processing only, Pb is ZERO tolerance .

In the Codex Standard for named vegetable oils the limit for Pb zero.

*Reference 2. **Codex Olive oil** is the oil obtained solely from the fruit of the olive tree (*Olea europaea*L.), to the exclusion of oils obtained using solvents or re-esterification processes and of any mixture with oils of other kinds. **Virgin olive oils** are the oils obtained from the fruit of the olive tree solely by mechanical or other physical means under conditions, particularly thermal conditions, that do not lead to alterations in the oil, and which have not undergone any treatment other than washing, decanting, centrifuging and filtration. **Detection of trace metals (iron, copper)** According to ISO 8294 (graphite furnace atomic absorption only in refinery oil)*

Our HACCP certification which we have been certified for 15 years will be failed because we will not be able to keep our water potable and we will not have the finances to compete with the HACCP Cars that will be placed upon us .

Reference 6. Rylstone Olive Press HACCP Certificate of Currency 2020-2021 attached

Our Organic Certification which we have been certified since 2001 (19years) for processing organic olive oil and organic bottling will be stripped from us.

Reference 7. Rylstone Olive Press Australian Certified organic Certificate of Currency 2020-2021 attached

Our family home will have heavy metal dust deposition and cause chronic exposure to Lead, Free Silica, Arsenic, Cadmium, mercury, cyanide and other heavy metals. The chronic exposure to our health will exacerbate any pre-existing renal function issues, liver function issues, cerebral function and motor and sensory peripheral neuropathies. Our adult children will be exposed to the same risk and our grand children's health will be significantly compromised affecting cerebral function, bone growth plate epiphysis causing bone deformities in children prior to puberty prior to the closure of the epiphysis.

Ref 9. Dr Peter Bentivoglio Bowden Submission 27 July 2020

Our Rylstone Olive Press will have heavy metal dust deposition and cause staff to be chronically exposed to Lead, Free Silica, Arsenic, Cadmium, mercury, cyanide and other heavy metals. The chronic exposure to our health will exacerbate any pre-existing renal function issues, liver function issues, cerebral function and motor and sensory peripheral neuropathies.

Our Workers Compensation premiums and public liability insurance premium will skyrocket with the added risk to staff and sub-contractors working on our properties and tourists visiting Rylstone Olive Press and Bentivoglio Olives.

The reasons why I object to this proposal are

1. I live in Monivae, within the Lue district boundary and I own and run Bentivoglio Olives with 8,000 olive trees and our olive oil processing facility the Rylstone Olive Press with a 1.2 ton an hour continuous extraction olive oil processing plant, with olive oil storage and bottling area and cellar door, with restaurant facilities for tourism visitors to our region including our Rylstone Rove tours, The Rylstone Long Lunches and many other tourism events. The Lue Road is the No 2 Tourism drive in our area! I planted my olive trees in October 1998 and they will be in the ground and provide fruit for health giving extra virgin olive oil for more than 300+ years. There are still olive trees in the Garden of Gethsemane in Israel over 2000 years old.
2. I Live approximately 5kms from the mine site
 - My home will be affected by noise, light, dust, odour from the mine and tailings storage facility and the ore dumps.
 - My 8,000 tree olive grove will be effected by the heavy metal dust deposition on their leaves, flowers and fruit. There is a Zero level of heavy metal uptake tolerance in extra virgin and virgin olive oils.

*Ref 10. Table 17. Study of the differences between Trade Standards Inside and Outside Europe
D.L. García-González, N. Tena, I. Romero, R. Aparicio-Ruiz, M.T. Morales and R. Aparicio, June 2017, Seville Spain*

3. The Bowden's EIS states the mine will mine lead, zinc and silver and the high risk of health concerns that my children and my grandchildren will be poisoned by lead and my husband and myself with kidney accumulation, heart disease and brain lead build up leading to earlier dementia disease. Lead dust cannot be seen or smelt and can cause permanent irreversible brain damage, and especially in young people. Young children lead uptake is 10 times that of adults of heavy metal and lead uptake.
4. I have lived in Monivae within the Lue boundary since 1997 – some 23 Years, and grown and produced our International and National award winning olive oils since 1998. I have employees (6 part time) and subcontractors who help me and our employees are at present on JobKeeper payments with Covid-19 restrictions.
5. My home, and our business of Bentivoglio Olives and Rylstone Olive Press is my only asset.
6. If the mine goes ahead I will not be able to live in my home any longer. Our house and olive grove is situated at approximately 730m altitude and we will look down onto the mine site and hear all the noise from the blasting, 24 hour excavation of ore, 24 hour cyanide processing plant, movement of trucks transporting waste rock to the waste rock emplacement area approximately 1.6km long and 700metres wide and a mound that is at 670 metres that they say they will cover with a HDPE plastic cover. Lead and other heavy metal dust will be deposited on the olive leaves, olive flowers and olive fruit. I will be forced to close my business, as being forced to sell our grove and processing plant will be a total failure as no one will want to purchase an olive grove with the high risk of producing an in-edible oil which has a codex classification as not an olive oil.
7. No one will purchase my home or my business or my olive oil, the olive grove or the olive press and if I was able to sell them it will be for a much lower value than it's current worth at \$6.5 million AUD.
8. I have been told by Bowden's that I will not receive any compensation for the loss of my health, my children and grandchildren's health, nor the loss of my 8,000 tree olive grove, nor the loss of my business at Rylstone Olive Press.
9. My husband, myself, our children and staff will be in danger driving on the Lue Road, with the increase in truck movements due to the mine. There will be at least one truck per day of explosives coming to the mine on the Lue Road and over 400 additional vehicles on the road going to and from the mine.
10. All the friends of our family and the clients and friends, tourists, of the Rylstone Olive Press will not visit us or our cellar door or buy our beautiful extra virgin olive oil, due to the risk of contamination. Families with children will have to adhere to lead protocols before they eat or put food in their hands, or, in their mouths. The risk to children with lead uptake, even small amounts, the lead deposits don't require accumulation in children and are immediately transported to their bone growth plates and this produces abnormal bone growth.

11. What little bore water we already work with to irrigate our trees will be inaccessible because the mine will lower the level of the water table in my bore and there will be no bore water for our family, the olive press, processing and washing of olives for olive oil, or for composting of our olive husk.

We appreciate that water is a precious commodity here and there is not much of it in the Lawson Creek Valley. It is with this in mind that we set up our soft water roof catchment plan and a dedicated olive washing water recycling facility which has been used since the Rylstone Olive Press was established in 2001, some 19 years. Using flow forms for solarising and oxygenating the washing water and a dedicated 120,000 Litre tank we recycle the olive washing water and at the end of the processing season we use that recycled 120,000 litres originally soft rain water to foliar spray fertilizers onto our olive trees.

12. My bore water runs a high risk it will be contaminated. It will not be compatible for irrigation of my trees, or stock and domestic use etc

13. My rainwater will be contaminated by lead dust deposit accumulation. The lead will settle on the roof and be washed into my rainwater tanks. In a 28 inch annual rainfall our house with 860sqm of roof area catches 602,000 Litres water annually into 360,000L tank farm and the Olive Press has 1200sqm of roof area which catches 840,000 Litres water into 480, 000 Litres tank farm plus 250,000 litre self-catching tank, 140,000 Litres catchment on the roof of the machinery shed and 75,000 Litres from the roof of our tractor shed and therefore our total soft water catchment is 1,907,000 Litres in soft water, overflow is piped into the dam. Our Dam is 60 megalitres and we use what water falls from the sky to supplementary drip irrigate 4000 of our olive trees and the remaining 4000 trees are dryland grown.

In a 28 inch rainfall year we supplementary irrigate because our trees will take water from rainfall at a rate of 4,480 litres per tree per annum in a 28 inch rainfall year.

Bowdens Silver mine with Lead and heavy metal dust deposition will cause our grove to fail to produce fruit due to the uptake of these heavy metals blown in with dust to contaminate the leaves, flowers and fleshy olive fruit.

The bushland surrounding Lue and Monivae has a wonderful birdlife population that lives and flies into our olive grove. The fleshy olive fruit can be eaten by the bird wildlife of our area and it is known that the unwashed fruit of mine deposited dust produces higher concentrations of heavy metals including Lead 40.7mg/kg and Cadmium at 0.58mg/kg causing a toxic effect on bird life with mortality and reproductive issues as stated in the The Guadamar Valley Spain pollution from open cut mine in 1998 (which was a single event).

Ref 1. Biomonitoring of Trace elements in the leaves and fruits of wild olive and holm trees, P. Madejon, T. Maranon, J. Murillo Seville Spain May 2005

The higher concentrations of trace elements in the tissues of olive fruits in addition to the dust deposited on the surface may have detrimental effects on birds feeding upon them. It is well known that olive trees are long living trees living for 100's of years which can take up trace elements from the soil, water and air and retain them for a very long time. With the Bowden Silver Lead Zinc open pit remaining open that way for over 200 years as it probably will not fill in that time with water the dust whipped

up by the numerous storms we encounter here will continually contaminate our olive trees and cause further harm to wild life.

. Ref 1. *Biomonitoring of Trace elements in the leaves and fruits of wild olive and holm trees*, P. Madejon, T. Maranon, J. Murillo Seville Spain May 2005

14. My mental health has suffered enough due to the long years of enduring drought, the bushfires, Covid 19 and now this application is another blow to my wellbeing. So many of us have brought new agricultural business entities to this area over the last 20-25 years and our business will be stripped from us by the risk of contamination from a silver mine taking out 41% more Lead and 58% more Zinc, using all the valley water. Destroying our soft water catchment system to irrigate our trees.
15. I am also concerned about the Aboriginal heritage sites within our area especially on Bowden's Silver mine area which risk the destruction of these sites.

Requirements if the mine is approved - Mine Owners and Council

1. Safety of Life and Limb
2. Protection of wildlife including Koala populations and Regent Honey Eater

If the mine goes ahead I will require the following to continue living in my home at 25 Mossy Rock Lane Monivae and working at Bentivoglio Olives and Rylstone Olive Press.

However, I cannot be certain that our olive production will survive and will slowly but surely deteriorate like the olive groves found in other areas of Australian mining.

At 16.5 years mine production high risk factors plus >5 years for tailings dam sealing will continue to create heavy metal dust deposition for 100's of years and that will impact on olive oil production for ever.

3. To provide 6 monthly heavy metal blood monitoring assessments within normal levels and 1 monthly heavy metal blood monitoring assessments with increased blood levels and/or symptoms, for my family, our employees and any tourists who may encounter the following symptoms of nausea, memory loss, muscular pain, abdominal pain, dizziness, irritability, rhinitis, dermatitis, asthma and coughing due to their increased risk of working or visiting on my olive grove and producing extra virgin olive oil. Specialist treatment to be a referral for all monitoring and treatment.

4. To provide potable water for my home, domestic use for my family, garden and roses, apple and pear tree orchard.

5. To provide potable water at Rylstone Olive Press for all staff, Cellar Door, Tourists and Events attendees.

4. To provide potable water for the continued certification of our HACCP management plan and ACO Organic management plan and for washing, processing, storing, filtering and bottling of Rylstone Olive Press extra virgin olive oil and any other grower's olives for processing. Approx. 16 megL per annum minimum.

Ref. 7 HACCP Certificate of Currency attached

Ref. 8 ACO Certified Organic Certificate of Currency attached

5. To provide irrigation water for my olive trees at 4 meg/ha for 16 hectares per year on going. 64 megL per annum

6. To provide reticulated water for bi-monthly foliar olive tree wash down for heavy metal dust deposition accumulation on 8,000 trees at approximately 30Litres per tree per spray. Following the wash down a foliar application of an Anti Transpirant Plant Protector will require to be trialled for at least 2-4 years. Anti Transpirant plant protectors may reduce plant transpiration of up to 50% without impeding photosynthesis or normal growth. If this proves to be effective in reducing the heavy metal dust deposition I will require using this foliar spray at 1x application per month except at flowering time or when Temperatures are >35 deg centigrade and for the life of the grove or until the Mine ceases to create heavy metal dust deposition from the open pit etc. – 5.8megL per annum

Ref 5. The Effects of Coal Dust on Photosynthetic Performance of the Mangrove, Avicennia Marina in Richards Bay, South Africa

As stated by Leandro Ravetti Australia's foremost Olive consultant.

"Regular spraying of the trees with the suggested volumes of water should be appropriate to physically remove the bulk of the dust that may settle on the foliage limiting their photosynthetic capacity (see <https://pubmed.ncbi.nlm.nih.gov/14638296/>). This action would obviously represent an additional production cost to the farm. The question without a clear answer here is if that repetitive wetting of the canopy could lead to a higher uptake of heavy metals and other contaminants and/or to increase the incidence of fruit and leaf fungal diseases. Any of those two undesirable outcomes could, to a certain extent, off set the advantages of a cleaner foliage. Without a lot more information available, you would have to set up a long term trial (at least 2-4 years) to demonstrate which of the proposed alternatives is better for the long term viability of the grove.

Yes, there are some specific Anti Transpirant Plant Protectors that may be worth trialing. Those products such as Floraguard, Envy, DraughtShield, etc. typically reduce plant transpiration by up to 50% (and potentially contaminant uptake), guard against excessive heat, UV and frost-stress, and protects from sea spray (avoiding toxic salts to enter the tissues) and windburn damage without impeding photosynthesis or normal growth. Again, without any specific research work done, it would be worth testing this alternative to prove its cost effectiveness.

This makes perfect sense. I believe that this is more a matter of concentration/dilution than anything else. Furthermore, when a tree is under stress, it tends to lose some of its selective capacity to uptake the right anions (NO₃, P₂O₅, etc.) or cations (K, Ca, Mg, etc) as oppose to those that pose a toxic risk such as Na, Cl or heavy metals."

Leandro Ravetti, Technical Director, Modern Olives, www.boundarybend.com

7. To provide a permanent water (closed) catchment facility system for the run off from the olive tree wash down spraying bi monthly. 5.8megL per annum

Therefore a 30 km x 2 sided under tree HDPE barrier system is required to control the wash down run off. This run off with heavy metal dust deposition will run onto the pasture sward under the trees and into the soil and trickle down to the water table, or be taken up again by the trees and therefore contaminating the olive trees via the root system, unless caught and treated in a closed system or removed from the property.

Our soil is coarse sandy loam >2mm for most of the grove. Drainage is excellent. Once the pasture sward is covered under the trees by the HDPE liner the pasture sward will die. Any heavy rains will run under the HDPE liners and wash and erode through the coarse sandy loam. Erosion issues will be all over our grove.

Please provide me with more information about

1. Health monitoring

2. Water provision to replace all water contamination by dust deposition or removal of groundwater see 8 below for quantity required for life of the mine and tailings dam sealing.

3. The risk of earthquakes, due to fault lines beside the Mine Pit and underneath the Tailings Dam and the Waste rock deposit areas and Leachate dam .

Coal Alliance with the Newcastle earthquake, Dr Klose 2006.

Ref. 11 <http://www.australiancoalalliance.com/Earthquake.htm>

4. How they will stop the lights from shining up onto our view as we are approx. 200m above the pit etc.

5. How they will stop the noise from reverberating up to us all day every day, night and day.

6. Water collection in a closed water catchment facility system for contaminated heavy metal water due to spraying olive trees for heavy metal dust deposition.

7. Removal of contaminated Heavy Metal water from the catchment area on our olive grove.

8. Mudgee Council or Mine owners responsible for providing Bentivoglio Olives and Rylstone Olive Press with the water resources needed to continue with our production of extra virgin olive oil?

Requirements as follows:

Water requirements Over 30years:

Stock and domestic – 240+ MegL

Irrigation – 1920 MegL

Rylstone Olive Press Cellar Door, events, staff – 240+ MegL

Rylstone Olive Press Processing Storage bottling HACCP Organic certification 480+ MegL

Bi-Monthly washdown water 8,000 tress – 174MegL

Approximate Total of : 3,054 Megalitres required over 30 years

Bibliography

References

1. Biomonitoring of trace elements in the leaves and fruits of wild olive and holm oak trees

The Guadiamar Valley (SW Spain) was polluted in 1998 by a spill from an open pyrite mine affecting approximately 55 SqKm. The aim of this study was to 1) monitor over a 3 year period 1999-2001 the concentration of nine trace elements in the leaves and fruits of wild olive and holm oak trees affected by the 1998 mine spill 2) determine whether the main mine sludge pollutants are being taken up and accumulated in the leaves and fruits of local trees. 3) To evaluate the potential risk for the foodweb, by analysing the trace element concentrations in unwashed samples of the leaves and fruits and comparing the values obtained with the established toxic thresholds

3.3.2 unwashed olive fruits

Some fruits harvested in 1999 showed very high values of Cd (up to 0.58mg Kg) and Pb (up to 40.7mg Kg) exceeding the tolerance level for chicken. The toxic effects of trace elements on birds depends on the dose; these can cause mortality, sublethal effects or affect reproduction. After the Aznalcollar mine spill (a single event) the levels of Pb and Cd in blood from birds feeding in the area were higher than normally found in uncontaminated areas.

2. Codex

Olive oil is the oil obtained solely from the fruit of the olive tree (*Olea europaea*L.), to the exclusion of oils obtained using solvents or re-esterification processes and of any mixture with oils of other kinds.

Virgin olive oils are the oils obtained from the fruit of the olive tree solely by mechanical or other physical means under conditions, particularly thermal conditions, that do not lead to alterations in the oil, and which have not undergone any treatment other than washing, decanting, centrifuging and filtration.

Detection of trace metals (iron, copper) According to ISO 8294 (graphite furnace atomic absorption only in refinery oil)

3. IOOC Standard

COI/T.15/NC No 3/Rev. 14 November 2019

2.1. Olive oils

2.1.1. Virgin olive oils are oils which are obtained from the fruit of the olive tree (*Olea europaea* L.) solely by mechanical or other physical means under conditions, particularly thermal conditions, that do not lead to alterations in the oil, and which have not undergone any treatment other than washing, decantation, centrifugation and filtration. Virgin olive oils shall be classified and designated as follows:

2.1.1.1. Virgin olive oils fit for consumption as they are:

(i) Extra virgin olive oil: virgin olive oil which has a free acidity, expressed as oleic acid, of not more than 0.80 grams per 100 grams and the other physico-chemical and organoleptic characteristics of which correspond to those fixed for this category in this standard.

CONTAMINANTS 6.1. Heavy metals

The products covered by this standard shall comply with the maximum levels of the General Standard for Contaminants and Toxins in Food and Feed (CODEX STAN 193-1995)-.:

4.8. Trace metals mg/kg (Lead tolerance is Zero)

Iron < 3mg/kg

Copper < 0.1mg/kg

4. Australian Standard AS 5264"2011

5. <https://pubmed.ncbi.nlm.nih.gov/14638296/>

The Effects of Coal Dust on Photosynthetic Performance of the Mangrove, Avicennia Marina in Richards Bay, South Africa

Dust from coal operations is a major problem in the Richards Bay area. In this study, we tested the hypothesis that coal dust adversely affects photosynthetic performance of Avicennia marina (Forssk.) Vierh., the dominant mangrove species in the harbour. Photosynthetic performance was determined on 10 trees by measuring carbon dioxide uptake and chlorophyll fluorescence parameters at two elevation sites and on upper and lower leaf surfaces that were covered or uncovered with coal dust. Measurements were made on five clear, sunny days at saturating light ($>1,000 \text{ micromol m}^{-2}\text{s}^{-1}$) and high temperature (28-30 degrees C). Coal dust significantly reduced carbon dioxide exchange of upper and lower leaf surfaces by 17-39%, the reduction being generally greater on the lower leaf surface that is covered by a dense mat of trichomes and salt glands. The reduction in carbon dioxide exchange by coal dust was higher at the high elevation site that supported isolated dwarfed trees. The chlorophyll fluorescence data indicated that leaves coated with dust exhibited significantly lower photosystem II (PS II) quantum yield, lower electron transport rate (ETR) through PSII and reduced quantum efficiency of PSII (FvFm). The chlorophyll fluorescence data supported the gas exchange measurements and are consistent with reduced photosynthetic performance of leaves coated with coal dust.

6. www.who.int/news-room/fact-sheets/detail/arsenic

7. Rylstone Olive Press HACCP Certificate of Currency 2020-2021

8. Rylstone Olive Press Australian Certified organic Certificate of Currency 2020-2021

9. Dr Peter Bentivoglio Bowden Submission 27 July 2020

10. Study of the Differences between Standards inside and outside Europe. D.L. García-González, N. Tena, I. Romero, R. Aparicio-Ruiz, M.T. Morales and R. Aparicio. June 2017 Seville Spain

11. <http://www.australiancoalalliance.com/Earthquake.htm>

Attachments:

1. HACCP Certificate of Currency attached
2. ACO Certified Organic Certificate of Currency attached
3. Photos Olive Grove planted 2004 with failure to thrive with in Mine area
4. Photos Rylstone Olive Press, Grove, Cellar Door, Front Paddock, Back Paddock, staff, Children in Grove
5. <https://rylstoneolivepress.com.au/videos> Celebrating Excellence
6. <https://rylstoneolivepress.com.au/videos> Exploring Rylstone Olive Press
7. Photos Bentivoglio House, rose garden, apple orchard, Kangaroos in the grove