

Submission
No 95

**INQUIRY INTO CURRENT AND POTENTIAL IMPACTS OF
GOLD, SILVER, LEAD AND ZINC MINING ON HUMAN
HEALTH, LAND, AIR AND WATER QUALITY IN NEW
SOUTH WALES**

Name: Ms Catherine Sullivan and Mr Craig Day

Date Received: 4 September 2023

Partially
Confidential



***Inquiry into
current and
potential impacts
of gold, silver,
lead and zinc
mining on human
health, land, air
and water quality
in New South
Wales***

Submission by
Catherine Sullivan and
Craig Day, landowners in
the Central West near
Cowra.

1. Response to Terms of Reference pp.2-15
2. Photographs 1- 25 Impact of gold mining on the Day Sullivan farming enterprise pp.16-26
3. List of Attachments - 1 to 8c p.27
4. Chronology of events 2000 to 2023 pp.28-30

Inquiry into current and potential impacts of gold, silver, lead and zinc mining on human health, land, air and water quality in New South Wales

Submission by Catherine Sullivan and Craig Day, landowners in the Central West near Cowra.

1. Introduction

Our mixed farming property, Shadeland, 100 Greenethorpe Bumbaldry Rd, Bumbaldry is 25kms west of Cowra in the Central West of NSW. This property has been in the Day family for 100 years and has successfully run a stock and cropping operation during this time.

In 2004 we agreed that David Hobby and William Flannery on behalf of Broula King Joint Venture (later to become Broula King Joint Venture Pty Ltd) could use 10 acres of our land to build a Tailing Storage Facility (**TSF**) at the Broula King gold mine (Mining Lease, ML 1617), as per the 2004 Memorandum of Understanding (**2004 MoU**) signed by both parties. This was on the very clear understanding that:

- a. this would be a short-term project – rehabilitation to occur concurrently and land to be returned to us in approximately five years.
- b. when we signed the Owners Consent for the 2005 Development Application DA26/2005 (**2005 DA**), all its requirements and those of the 2005 Environmental Impact Statement (**2005 EIS**), would be adhered to.
- c. no adverse impact would occur to our surrounding land.
- d. an impermeable kaolin clay liner would be used in the TSF and for rehabilitation.
- e. The design and construction of the TSF wall would comply with the 2003 Tailing Storage Facility Design Broula King Report (a document embedded in the 2005 EIS) (**2003 TSF Report**), the 2005 EIS and Condition 61 of the 2005 DA.
- f. this would be a nil-exit mine site, that is, no water would leave the site and enter our property.

The purpose of this landowner submission is to outline the impact on farmland, waterways, and families when agreements between miners and landowners are not followed, and to highlight the consequences when government agencies fail to hold mining companies to their legal requirements.

We consent to this submission being made public, in full.

We are willing to attend an inquiry hearing to present how we have been adversely affected by gold mining.

(a) Historical mining and rehabilitation

Gold mining has been an historic part of the Bumbaldry area. Reef mining's height was in the late 1800s, early 1900s. After that it became an intermittent activity. Gold mining directly impacted our property as the tailings produced by mining were stockpiled on our land. In 2000/2001 under the NSW Government's Derelict Mines program, \$99 030 was spent by the NSW government rehabilitating the old workings so heavy metals did not enter the gully

network leading to the Tyagong Creek. We also contributed financially (approximately \$22 000) to this work by establishing further earthworks that ensured the integrity of the project.

Broula King - Soil erosion of tailings and advancing gully heads in the local creek were stabilised and concrete flumes installed. Shafts and adits were either filled or fenced.

Broula King Sediment control works and safety fencing. \$99 030.00

Attachment 1 Department of Minerals Annual Report 2000/2001 extract – Mineral Resources New South Wales

(b) Background to Broula King Gold Mine

Under the 2004 MoU we received a one-off payment of \$1,000.00 per acre (\$10,000.00 in total). This has in no way compensated us for what we have lost as set out in this submission.

We assumed that the new Broula King Joint Venture mining operation would adhere to the clear requirements of the 2003 TSF Report (**Attachment 2a and 2b**), the 2005 EIS, the 2005 DA as well as the 2005 Mining Operation Plan and the mining lease, ML 1617. As mining occurred, and at its completion, we believed concurrent and final rehabilitation, as outlined by these documents, would take place. Mining occurred between May 2012 and June 2014.

Despite no concurrent rehabilitation occurring, the TSF not being built to specifications, and onsite water and sediment management never being resolved, the Broula King Mine Site was allowed to go into Care and Maintenance by the NSW Mines Department (now the NSW Resources Regulator) in 2014.

By the mining company's own acknowledgement, the gold ore resource was exhausted by 2014. Why didn't the Mines Department direct the miner to rehabilitate the site, and end mining lease, ML 1617?

Attachment 3 – map of BKJV gold mine/Day Sullivan property/photograph of TSF

2. Impacts on land and soil, crops and livestock

Now, in 2023, our property is experiencing significant, adverse impacts because of the Broula King gold mine. Historic gold mining activity had been addressed in 2000/2001, safeguarding our land against heavy metal contamination. Our current problems are a direct result of the poor management and oversight of the Broula King Joint Venture gold mining operation from the 2010 clearing of land, the construction of the site in 2012, mining activity from 2012 to 2014 and a lack of care and maintenance from September 2014 to 2023.

(a) 2010

13 August 2010 – onsite visit by _____ from NSW Mines Department in response to landowner concerns about:

- the impact on the water table of clearing the scrub for the construction of the TSF
- the permeability of the entire TSF site
- poor quality of clay used to line the key trench of the TSF
- water exiting the site and then flowing through the rehabilitated tailings dam
- the long-term impact on our new dams, constructed for irrigation, if outflows from the mine site were not controlled

- what is in place for at the project's end to deal with surface catch and runoff so the TSF comes back to drain-line level and ultimately evaporates.

In 2023, the TSF resembles a small lake (**see Attachment 3 and Photos 5, 6 and 25**). Water management is still not resolved; our dams are now so contaminated they cannot be used to hold irrigation water. These dams, without our consent and outside land covered by ML 1617 (and any compensation agreement), are referred to by BKJV as Sediment Basins 9 and 10 when that was never to be their function.

(**see Photos 1 and 2 -2010 farm dams, Photo 3 and 4 - current state of farm dams**)

(b) 2012

By February 2012 we were very concerned about the construction of the TSF. We worked with Sheridan Ledger from NSW EPA, Bathurst, to arrange a meeting of all agencies at our house in March 2012. The Weddin Shire Council General Manager and Environmental Officer, Sheridan and a senior NSW EPA member, a Mining Regulator representative and the BKJV Pty Ltd mining representative attended.

(See Attachment 4 for the PowerPoint presented at this meeting)

The BKJV Pty Ltd representative refused to concede there was an issue with the TSF despite the photographic evidence showing leaks even at this early stage. He assured the meeting that all was proceeding according to the requirements of all government agencies.

Near the conclusion of the meeting, I asked for a guarantee that each regulatory authority present would oversee this mining operation so that we would not suffer any adverse outcomes. Each individual present assured us that they would make the mining company adhere to its requirements.

Condition 1 of the 2005 DA provides that the "development shall be undertaken in accordance with the Environmental Impact Statement..."

Page iv of the 2005 EIS clearly outlines that the TSF dam wall was to be constructed from:

"...non-acid generating mine waste and have an impermeable clay wall lining. The clay used in the TSF construction will be obtained from insitu material within the TSF area and from Day's clay pit approximately 3 km North West of the project site..."

Contrary to the 2005 EIS and the 2005 DA, the TSF clay was sourced from an alternative and inferior source.

The TSF was also to be built in accordance with Condition 61 of DA26/2005:

61. Quality assurance and quality control mechanisms must be in place to satisfaction of the DPI Mineral Resources prior to the commencement and during construction of the Tailings Storage Facility wall. The floor of the Tailings Storage Facility shall be confirmed by testing at a rate of one test per 1,000 square metres to ensure that the co-efficient of permeability of 1×10^{-9} m/sec or better over 900mm is achieved. The Tailings Storage Facility is not to be constructed of acid forming material. The storage facility is not to operate unless these provisions have been achieved. A copy of the

results of the testing is to be provided to the DPI Mineral Resources and Council prior to the use of the facility.

The assurances from BKJV that kaolin clay would be used to line the TSF was part of our reason for agreeing to the operation. BKJV helped the Day family establish a mining lease over their existing kaolin clay pit, so the resource was ready when the mine commenced operation. No kaolin clay was ever used. The test results of the material used could not be found under our 2023 Government Information Public Access (**GIPA**) application, nor could the Certificate of Construction for the TSF be located under this process. What was established by the Soil Conservation, Scone Laboratory testing undertaken, is that the material used should not build a farm dam unless plastic lined due to its sodic, dispersive nature and high risk of tunnel failure. The kaolin testing proved it was a superior product, impervious and ideal for lining a tailings dam (Dr Andrew White, Consulting Geologists and Management Consultants, 2013).

(c) 2012 to 2014

Mining commenced in May 2012. Despite the 2005 EIS stating that non-acid mine waste was to be used, potentially acid forming (PAF) rock was placed in the TSF wall as it was built concurrently with the mining operation. The wall itself was not built to the required 3:1 batter as per the 2003 design. **(See Attachment 2 2003 Tailing Storage Facility Design Broula King report and p.3 of Attachment 3)**

Impervious clay lining material was not used. Water was not managed on site so numerous outflows have occurred onto our land which have carried heavy metals through the gully system to the Tyagong Creek.

BKJV continues to be issued with directives from the NSW Resources Regulator and the NSW EPA to address issues with the construction and management of the TSF and the entire mine site. These directives are outlined in detail in Part 4(b) below.

(d) 2015 to the present

After mining ceased in June 2014 the Broula King gold mine was placed in "Care and Maintenance" in September 2014. The NSW Resources Regulator does not have a rationale for why mining operations should be allowed to be placed in Care and Maintenance. A significant outcome of the Upper House inquiry would be to recommend a standard so that a mining company has to:

1. justify why they should be allowed to place their operation into hiatus and not immediately commence rehabilitation;
2. give an immovable timeline for the length of time the site will be in Care and Maintenance;
3. be graded as to the environmental impact being placed in Care and Maintenance will have, especially in regard to water and sediment control;
4. comply with strict conditions for the site during this time;
5. pay a significant bond on top of the existing rehabilitation bond to obtain extra time;
6. be unable to enter Care and Maintenance if private land is affected. A mining entity with mining or ancillary activity on private land should not be allowed to go into Care and Maintenance without landowner consent or the purchase of the land.

The Broula King gold mine should not have been allowed to go into a Care and Maintenance state. The gold resource had been exhausted. Water and sediment control had not been achieved. There were major issues with the construction of the TSF, especially the wall and the fact it held so much water. A deep erosion gully formed in the western front of the wall many years ago and has not been addressed. Fencing has not been maintained, so wildlife can enter the site and sediment can exit. Its potential adverse environmental impact was high.

Of even deeper concern is the water surface outflows and the ground water contamination.

3. The impact on catchments and waterways, affecting both surface and groundwater used for agricultural production, and on aquatic biodiversity

(a) 2023

In 2021, after one of our farm dams became clear with rusty material on the dam floor, we cancelled our agistment arrangements with long term clients, who had until then been agisting up to 120 cattle per year on our property, providing dependable income. We felt that this was the responsible action to take as livestock could have potentially been poisoned. Testing proved there was a high level of iron. The Canadian guidelines are 0.3mg/L but the Australian and New Zealand Water Quality standard does not set a limit. Our dam was 10mg/L.

This dam was used to water our garden. Using an in-ground sprinkler, half an established walnut tree was watered. Leaves on the watered side turned brown and died while the unwatered side remained green. On the basis of this experiment, and death/injury to other plants, we stopped agistment and sourced an alternate garden water supply which is now showing early signs of the same issue. **(See Photos 7, 8 and 9)**

Now at least seven of our eleven farm dams exhibit these high iron symptoms. Expert electromagnetic testing (**Attachment 5 Extract AgTEM Electrical Resistivity Tomography for Groundwater Pollution Investigation – Bumbaldry Rd Cowra NSW Feb 2023 Groundwater Imaging**) indicates the weight from the large volumes of water held in the TSF and the ore pit are exerting significant pressure on underground water networks. Therefore, minerals are being pushed to the surface. This electromagnetic testing repudiates the assertions of the September 2021 NSW EPA report which stated that the sampling results do not indicate that the mine is the source of iron. We undertook this expensive testing because in September 2021, the NSW EPA informed us no further testing would be conducted on our property even though they were just about to approve the pumping of significant volumes of low pH TSF sump dam water into the unlined PAF rock ore pit, based on desktop hydrology. **Attachment 6 2021 NSW EPA test results.**

In 2022 we stopped cropping on our property. In a typical year we would sow 170ha (400 acres) of a combination of wheat and canola, plus pasture for stock and fodder. Our property is impacted by both below ground and surface water contamination from the Broula King Gold mine preventing the continuation of our wheat, canola and pasture growing enterprise which is a significant portion of our income.

(b) Ground water contamination

Currently hectares of our land cannot be farmed because water covers the surface. This is in stark contrast to our neighbours' properties. They are asking, "Why is your property so wet?" Underground water is now seeping to the surface, changing or killing vegetation and ultimately entering the Tyagong Creek. Where the overland flow enters the creek, established River Red gums are dying, the vegetation is changing or dying, and pooled water has evidence of acid mine drainage. The February 2023 electromagnetic testing indicates that subsurface water is entering the creek below ground as well. **(See Photos 19, 21, 22, 23 and 24)**

(c) Groundwater Monitoring Point 1

At the base of the TSF, just outside the high fenced area, is Ground Monitoring Point 1 (**GMP1**). It is a monitoring bore used to measure water level and water quality. This piezometer should have water at least 2-3 metres down. Unfortunately, despite the pipe being 80cm above the ground, it continues to overflow with bubbling, discoloured water and if the top is screwed on, water simply bubbles out of the ground surrounding the pipe. The unsuccessful capping of the pipe was the outcome of our repeated requests to the NSW EPA and BKJV for the seepage to stop. This monitoring point needs to be concrete capped and plugged. **(See Photos 12 and 13)**

We have estimated that this water has been leaking at a rate of almost a litre per minute since 2015, with varying levels of contamination. (1,440L per day, 525,600L per year). In 7 and a half years that is 3,942,000 litres of contaminated water that has flowed through our land. Initially it was the highly saline content that affected our downstream environment, changing vegetation and ultimately causing plant death. Now it is the high levels of lead, zinc and iron with increased chromium levels in the surrounding soil, that are of concern, plus salinity.

The obvious question to ask is why is this still happening? On page 10, the 2003 TSF Report stated that the pipe would be pumped if indications of seepage to groundwater occurred. It is rated as a medium to high risk, yet no action has been taken despite GMP1 overflowing for the last 7 and a half years. **(See Photos 13, 14 and 15)**

When the groundwater is so close to the surface, why would the NSW EPA permit the pumping of even more water into the unlined ore pit above GMP1?

(d) Surface Water Contamination

While underground water contamination is certainly affecting agricultural production, our property is also affected by surface water contamination. Cadmium is released by the mining process. NSW EPA testing in January 2021 showed the level in the sump dam at the base of the TSF, BK04, was 50 000 times the allowable limit for the Australian and New Zealand guidelines for Fresh and Marine Water Quality (ANZG, 2018). There is uncertainty as to why cadmium has been found in the sump, but one explanation is the TSF toe is allowing seepage from the TSF. Other heavy metals were also present.

See Attachment 3 – Map of Broula King mine site, affected waterways and Shadeland. See this map for locations of dams, pipes and monitoring points.

If the mine site retained all these materials, we would not be experiencing such adverse effects.

pH		2.8		
Conductivity		19 000		
Aluminium	mg/L	490	8 900 x allowable limit	
Cadmium	mg/L	10	50 000 x allowable limit	0.0002mg/L limit
Cobalt	mg/L	6.1	4 400 x allowable limit	0.0014mg/L
Copper	mg/L	38	27 000 x allowable limit	0.0014mg/L
Zinc	mg/L	580	73 000 x allowable limit	0.008mg/L

NSW EPA Testing 18 January 2021 **Attachment 7**

The NSW EPA, in their April 2021 report of the 18 January 2021 test results, stated the *tailings catch dam was characteristic of mine tailings and would pose a risk to waterways if released*. This has occurred numerous times via the pipe from its adjoining dam in times of intense rainfall. We estimate at least 20 events of multiple days since 2015.

The result of the samples on 18 January 2021 also identified very low pH and high sulphur in the Catch Dam (BK-04). High sulphur was also observed in the seepage area below the tailing dam (BK-09). The groundwater results are indicative of acid mine drainage occurring in the tailings areas.

This highly contaminated water from the TSF sump, BK04, is now allowed by the NSW EPA to be pumped into the ore pit, but for years prior to this and at times of high rainfall this water mixes with another dam to discharge onto our property through a 150mm trickle pipe. In October 2022, a flow meter measured amount was over 80 000L per day, over multiple days, over multiple rainfall events. The pH was 4.4 on 22 October 2022, despite extremely high rainfall. Over the life of this mine site, we estimate millions of litres of contaminated mine site water has flowed from these dams at the base of the TSF wall, through the pipe, down the dam and gully network and into the Tyagong Creek and onwards. The surrounding vegetation reflects this impact. Now we are seeing signs of aquatic life being affected in dams and the creek. **(See Photo on p.3 of Attachment 3, plus Photos 14, 15, 16, 17 and 19.)**

Since October 2021, Broula King Joint Venture Pty Ltd has been permitted by the NSW EPA to pump the contaminated water listed in the table above into the unlined ore pit as a 'short term measure' while works to the TSF wall are completed (as originally required under s. 240 Directions Notice NTCE0009088 by 17 December 2021). It is now the end of August 2023 and the works required by NTCE0009088 to the TSF have yet to be started, yet alone completed.

The ore pit was blasted numerous times during the mining process and contains unfilled adits and shafts. The following example, obtained under GIPA - Ground Doctor Pty Ltd report dated 30 September 2021 (**Ground Doctor Report**) supplied to the NSW EPA, indicates the volumes involved. This was one of many pumping events in the wet years 2020, 2021 and 2022. The Ground Doctor Report states:

Broula King provided a log of water transfers to Ground Doctor. The log indicates that water was transferred from SB5 (sediment dam at base of TSF wall) to the open pit on five occasions spanning 26 July 2021 to 6 September 2021... In total, approximately 8.9 ML were transferred to the open pit.

This pumping event occurred before BKJV were given NSW EPA permission in October 2021. The TSF was so full it was at risk of catastrophic failure from overtopping (noting NSW Resources Regulator Notice NTCE0008216 issued 30 June 2021- see below) so pumping to the TSF was not a viable option. If water management had been addressed during construction or even before going into Care and Maintenance, water would not have exited the site via the highly contaminated sump dam, nor would the unlined, acid rock ore pit contain tens of megalitres of low pH, heavy metal laden water that is simply entering the groundwater and adding to the huge pressure exerted on the top of the catchment area.

Our farming land is now exhibiting the consequences of poor water management on the Broula King gold mine site. The hectares of land covered in surface water, despite an average rainfall year, contain elevated levels of Copper, Chromium, Lead and Zinc. **(See Photos 20, 21, 22, 23, 24 and 25)**

4. The adequacy of the response and any compliance action taken by the regulatory authorities in response to complaints and concerns from communities affected by mining activities

(a) NSW EPA

As is obvious from the above narrative, we have been trying to work with the NSW EPA for over a decade. We have not achieved a satisfactory result. A water management plan has finally been created but the two new dams constructed on site as part of this are not plastic lined, but simply dug into rock and porous material. Water control continues to be a major issue because the TSF and ore pit are so full.

Most recently on 4 July 2023, I sent an email to the EPA Bathurst office with a photograph of the hectares of water over our paddocks and the dead and dying trees in the Tyagong Creek. I also sent an image of the iron material in the Bumbaldry Creek to the northeast of the mine site that is about to cross the road to our neighbour. **(See Photos 18 and 19.)**

The EPA has yet to respond to our concerns. This may be because in September 2021, just before they gave the miner permission to pump low pH water from the TSF sump into the ore pit, they stated they would not be doing any further testing on our property. Contamination no longer appears to be contained to our farm, and we are deeply concerned, especially for other neighbours who use the Tyagong and Bumbaldry Creeks as a source of stock water.

When I suggested to a downstream neighbour to contact the EPA regarding his concerns over livestock deaths that occurred after his cattle grazed along the Tyagong Creek, he was advised to contact BKJV Pty Ltd and told the EPA does not conduct testing.

(b) NSW Resources Regulator

The NSW Resources Regulator actions mirror those of the NSW EPA. We have tried for such a long time to have BKJV address all concerns on site, especially in relation to the leaking of the TSF facility. No government agency will concede the TSF is leaking but attribute the low pH in the sump down to the PAF rock in the TSF wall. Even if acid rock is the cause, we are in August 2023 and still no remediation has occurred, that is over a decade of leachate.

The NSW Resources Regulator has issued BJKV with the following directives over the past 5 years:

- | | |
|------------------------|---|
| 9 July 2019 | S. 240 Directions Notices issued under the Mining Act 1992: NTCE0002870, NTCE0002871 and NTCE0002873 which included the requirement that an independent expert report is prepared examining chemical and geotechnical concerns linked to the TSF wall |
| 4 May 2021 | Notice of Concerns in relation to the TSF being used to store surface run off water & that there is a "hole" at the top of the TSF which has "increased the risk of piping failure". (NTCE0008212) issued under s.23 of the <i>Work Health and Safety (Mines and Petroleum Sites) Act 2013</i> |
| 30 June 2021 | Improvement Notice NTCE0008216 issued under s. 191 of the <i>Work Health and Safety Act 2011</i> to implement system for inspecting free board (markers) and implement system for inspecting decant pond standoff (markers) from the embankment wall |
| 1 November 2021 | S.240 Directions Notice NTCE0009088 which required certain works be undertaken to the TSF. These works were originally required to be completed by 17 December 2021. An extension was then granted for works to be completed by 28 December 2022 and another extension has now been granted until 31 December 2023. |
| 17 October 2022 | Improvement Notice NTCE0011060 issued under s. 191 of the <i>Work Health and Safety Act 2011</i> was issued in response to an inspection of the Mine on 14 October 2022 where it was "identified that a large amount of water is stored on top of TSF1." The notice mine operator must ensure that the water currently stored in the TSF is reduced to ensure that the 1.0 metre freeboard requirements is maintained and the hazard rating for the TSF is maintained as "Low". |

BKJV continues to be granted extension after extension as to the required works to the TSF wall as originally required under s. 240 *Mining Act 1992* Directions Notice NTCE0009088. As set out above, these works were originally required by 17 December 2021. An extension was then granted for works to be completed by 28 December 2022 and another extension has now been granted until 31 December 2023. This delay is unacceptable. No works have been commenced to date.

In July 2020, we were desperate for a solution to our situation. We could not move on with our lives because we still had half a tailings storage facility on our land and were unable to sell at a true market price. We were also experiencing worrying signs of contamination.

We invited Stephen Clipperton, NSW Resources Regulator, and Sheridan Ledger, NSW EPA to yet another meeting at our house. Stephen suggested we write to the Ministers and explain our situation. I did this.

The response from Matt Kean, then Minister for the Environment, was that there was no contamination on our land, despite the EPA's own 2015 testing showing there were issues and our photographic evidence including images of GMP1 and dying vegetation. In his letter dated 13 October 2020 he stated that an:

Analysis of samples does not indicate that there are any offsite impacts to surface waters ... and Similarly, groundwater monitoring shows ... no quality impacts of concern.

The response from Anthony Keon, Executive Director Resources Regulator, 9 September 2020, was to say:

Broula King Gold Mine was the subject of heightened regulatory action by the Resources Regulator and we are taking active enforcement action to ensure compliance with the mining laws... This action includes issuing fines totalling \$10 000 in July this year.

The NSW Resource Regulator has directed BKJV to undertake a full suite of works to the TSF wall originally by 17 December 2021. It is now August 2023 and these works have still not occurred (S.240 Directions Notice NTCE0009088- per above).

These letters are addressed to Steph Cooke as she is our local member and had visited our farm to see the impacts of mining in August 2020.

Attachment 8a – Our letter to the Ministers

Attachment 8b – Final letter from Matt Kean MP 13 October 2020

Attachment 8c – Letter from Anthony Keon on behalf of John Barilaro 9 September 2020

In December 2020, the Resources Regulator facilitated the sale of BKJV Pty Ltd to new owners, Sunshine Reclamation, despite the current directives under the Mining Act, the lack of a Mining Operation Plan and numerous issues with the site, particularly water management and the construction of the TSF wall. At a meeting we attended in November 2022 at the Bathurst

NSW EPA office with five people from the Resources Regulator and two from NSW EPA, the line we were verbally given was it is better to have a miner on site, than no miner at all.

We are not sure about that as the new mining entity wishes to dig up the historic tailings, despite the rehabilitation work carried out in 2000/2001, process these to extract gold that will then fund the next stage of their project. The old tailings are on our land outside the agreed 10-acre area for the TSF. We have not and will not give permission for this to occur, as the threat to the downstream environment by disturbing this fragile area is too great. BKJV have since attempted to lodge a modification to the 2005 DA with the Weddin Shire Council despite our lack of owners consent.

(c) Weddin Shire Council

The future of the Mine site remains uncertain. There is currently only a draft Rehabilitation Management Plan (RMP) on the BK Enterprises Website. This draft RMP proposes on page 41 that "no progressive rehabilitation works will be undertaken in the next 5 years as areas would need to remain available for further operations."

There is also concern that that contaminated material from Sunny Corner, NSW will be brought to the Mine site to be re-processed- noting that BKJV Pty Ltd is wholly owned by Sunshine Reclamation. Our understanding is that Bathurst Regional Council, as the consent authority for this Sunny Corner initiative, has already approved this despite no Development Application being lodged with, or approved by, the Weddin Shire Council.

When we agreed to the TSF on our land it was under the conditions listed on page 1 of this submission, essentially for the mining of gold ore. This operation is now complete. Weddin Shire Council issued the 2005 DA consent based on the 2005 EIS. They are responsible for holding the mining enterprise to these agreed standards. Under the *Environmental Planning and Assessment Act 1979*, the proposal to construct and operate a tailings storage facility is assessed and approved as part of the development consent. The requirements of the development consent are regulated by the consent authority, such as, in this case, the local council (for non-State Significant Developments).

The relevant consent authority also has a compliance role and must ensure compliance with conditions of the development consent. In most cases, this involves enforcing the tailings management commitments outlined in the environmental assessment documentation that formed part of the development application. The 2005 DA and the 2005 EIS were the framework for the Weddin Shire Council to oversee the Broula King gold mining activity.

Why didn't the Weddin Shire Council work with the Resources Regulator and the NSW EPA to ensure our property did not become contaminated? The meeting in our dining room in March 2012 was sufficient warning.

5. The effectiveness of current decommissioning and rehabilitation practices in safeguarding human health and the environment

We believe there are enormous deficiencies in the decommissioning and rehabilitation of mine sites. As already stated, we wish to see a new set of parameters to control how a mining operation enters Care and Maintenance.

When numerous documents, and very clear legislation, outline how a site is to be managed and rehabilitated, the expectation of the community and affected landowners is that these requirements will be enforced. A lack of action can have disastrous consequences. There needs to be effective oversight from government agencies, significant penalties for the mining company for non-compliance, not \$10 000 or \$15 000 but triple figure penalties, and career consequences for those in government agencies who fail to do their duty.

Other concerns

The agreement between the mining company and the affected landowner for the mining activity, or ancillary mining activity, that underpins the issuing of a mining lease is not shown to the Resources Regulator. There may be valid reasons for this. We suggest an independent body oversees these agreements or better yet, no miner is allowed to create ancillary mining activities, for example a TSF, or mine for gold on private land.

Despite the depth of assurances we were given by the government agencies involved and the mining company, plus the substantial documentation to hold the mining company to account, we have lost our farm. No one would wish to purchase a property with such significant issues and, given the trajectory of this mining company's intentions, no rehabilitation will occur for five years, more of our land will be dug up and then more toxic snot from a myriad of mine sites will be brought in to be processed and stored on our land.

The economic loss of agricultural production on our farm has been significant. **Photo 18** of our neighbour's wheat and canola shows the capacity of this highly fertile and productive Cowra/Greenethorpe area. The foreground shows our farm and fallow (unsown) paddocks.

An estimate of our loss to date is:

	2021	2022	2023	Total
Agistment	-\$27 000	-\$27 000	-\$10 000	
Cropping		-\$270 000	-\$262 000	
Fodder		-\$28 000	-\$25 000	
Total	- \$27 000	-\$325 000	-\$297 000	- \$649 000
Loss of the value of the property, Shadeland, and its unusable water licence – approximately \$3 560 000				

We also run a training business, Spray Safe & Save P/L, which is currently attempting to pay for our land and all machinery payments, as well as its own costs. This is not sustainable

especially as we have now paid more than \$150 000 in legal fees and independent water, soil and EM test results.

There is an economic cost to small landowners when mining companies fail to meet their obligations under Mining Operation/Rehabilitation Management Plans, development consents and environmental frameworks. There is also a huge personal toll on those landowners and their families.

We were asked to list all our meetings, phone calls and emails with government agencies involved in over 16 years of struggle. It would have taken far too long. Instead, the chronology attached as the final part of this submission lists some key moments. What a simple list of dates and events does not show is our dismay and, at times, despair.

The BJKV Pty Ltd mine site has had a significantly detrimental impact on our lives. Having only received \$10,000 as part of the 2004 MoU, and being left in a state where we cannot use our farm for cropping or agistment, we want the government agencies involved to initiate the rehabilitation of the site and, once completed, we want ML 1617 revoked for the numerous breaches that have occurred. We do not want the old tailings disturbed.

However, we will still be left with a contaminated farm as water containing heavy metals will continue to seep through our land.

A solution to that would be welcome.

Recommendations

- 1. Design a robust Care and Maintenance system so a mining company must:**
 - a. justify why they should be allowed to place their operation into hiatus and not immediately commence rehabilitation;
 - b. give an immovable timeline for the length of time the time site will be in Care and Maintenance;
 - c. be graded as to the environmental impact being placed in Care and Maintenance will have, especially in regard to water and sediment control;
 - d. comply with strict conditions for the site during this time;
 - e. pay a significant bond on top of the existing rehabilitation bond to obtain extra time
 - f. be unable to enter Care and Maintenance if private land is affected. A mining entity with mining or ancillary activity on private land should not be allowed to go into Care and Maintenance without landowner consent or the purchase of the land.
- 2. Consider special advisors for small councils dealing with such difficult issues as approving and monitoring mining Development Consents, including historical and current consents of concern.**
- 3. Increase the ability of the NSW EPA to fine non-complying mining companies by providing them with more funding and compliance officers. A specialist mining team rather than a generalist one would greatly improve outcomes.**
- 4. Set limits to extension deadlines granted by the Resources Regulator to mining companies who fail to meet their obligations.**
- 5. Provide education for landowners about allowing mining on private land in the same way as significant information has been provided about exploration access.**

6. **Develop an independent body to see oversee the compensation agreement between a private landowner and a mining company, including binding contractual obligations of the mining company to safeguard the landowner. This must be submitted to the Resources Regulator prior to the commencement of mining.**
7. **The NSW EPA be able to organise independent testing that is then paid for by the mining company, including the auditing of Environmental Protection Licence returns submitted by mining entities.**
8. **Allocate one lead agency per mine site. This agency would lead a team from the Resources Regulator, the NSW EPA and the consent authority (Shire Council or State authority). Instead of having to deal with multiple government departments, an affected landowner could direct all communications to one place. The mining company would be unable to play one agency against another.**
9. **The NSW Resources Regulator is required to maintain an online public register under the Mining Act for all notices issued under the Act.**

We appreciate the opportunity to address the Upper House Committee regarding our concerns.

Yours sincerely,

Cath Sullivan and Craig Day

3 September 2023



Photo 1 and 2

2010 farm dams, incorrectly called Sediment Basin 9 and 10. These were healthy farm dams, well able to support an irrigation initiative. They are brown because they are not salty. Salt makes the dams become clear.

This is 10 years after the rehabilitation of the old tailings which are located upstream, so a successful outcome.



Photo 3 (above)

Farm dam used to water garden Jan 2021 – still looks the same. Notice the red rusty material – iron leachate. See Photos 7, 8 and 9.



Photo 4 (Right)

Dam below the mine site. 26 March 2022
Reinforces **Photo 15**.



Photo 5
 Broula King TSF dam - northern section. The TSF should not hold water but dry material from the mining process. The lack of water management on site has created a small lake of contaminated water. Photo taken 10 July 2021, but the TSF looks the same in August 2023.

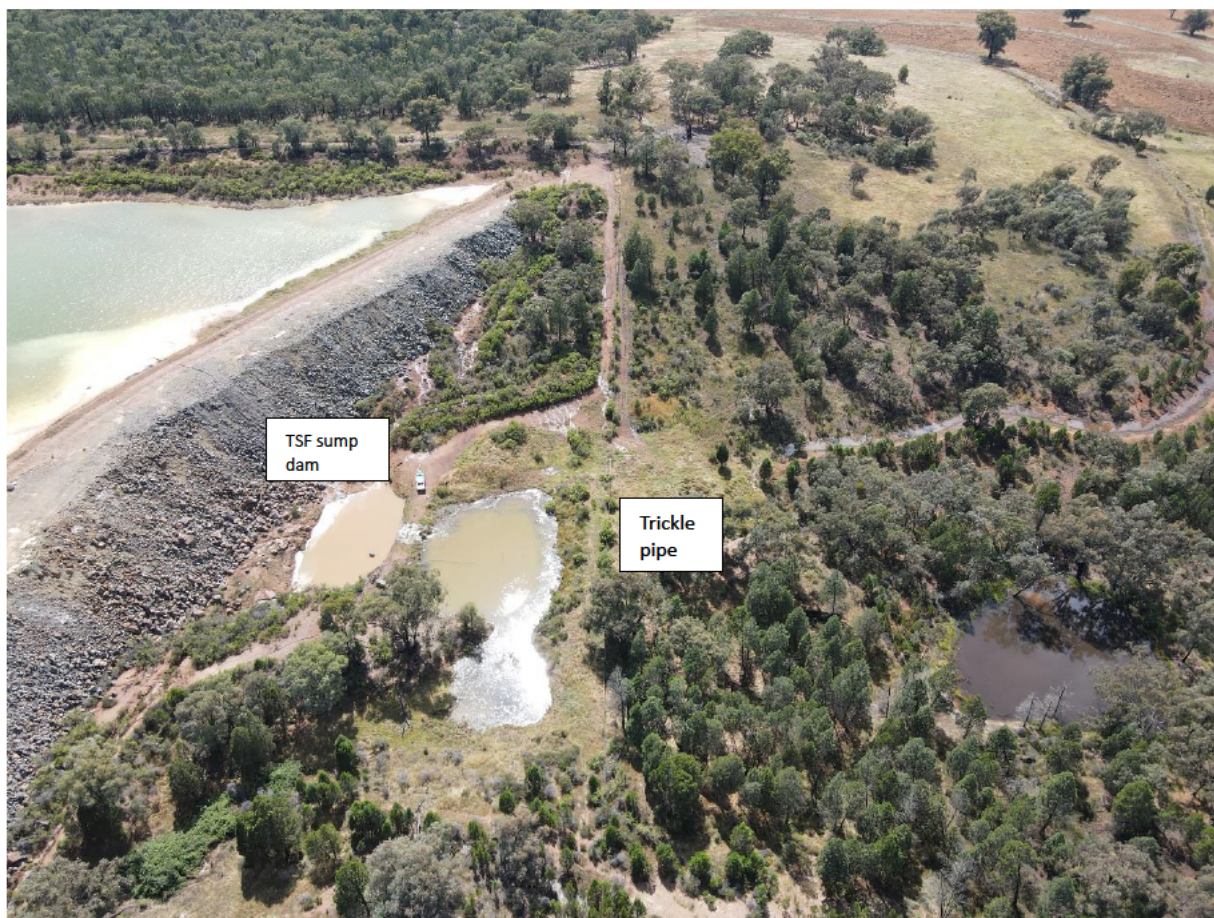


Photo 6 2022
 TSF wall showing over steep batter. Small dam in the middle is the sump and adjacent dam contains the trickle pipe. At times of high rainfall these dams merge and the low pH water containing heavy metals, including cadmium, exits the site, initially to a concrete flume then to the dam on the lower right. See Photo 9 and 10

Photo 7

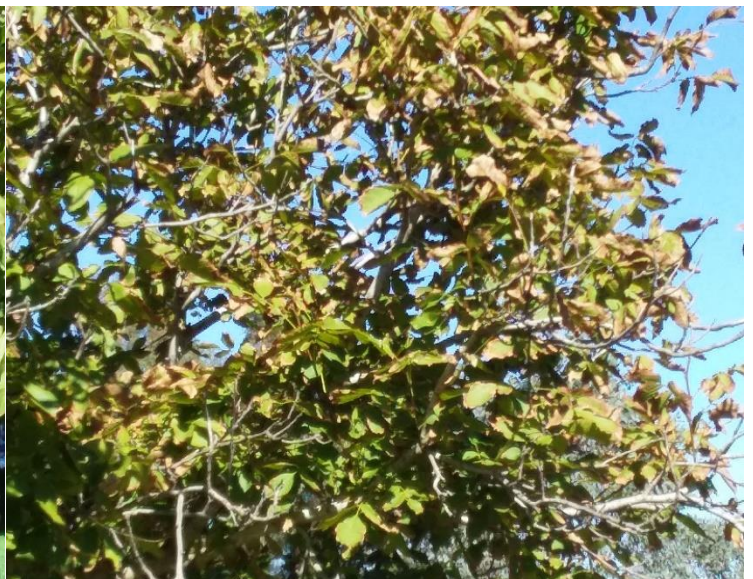
This is the black plastic poly pipe through which water moved from the affected farm dam to the holding tank at the house. It was used to water the garden. This is the result a slow leak as it entered the tank. Jan 2021

**Photo 8 and 9**

The experiment we conducted to try and understand why the garden looked so unwell was to water half of a walnut tree and leave half unwatered by the sprinkler. Where the tree was watered the leaves turned brown and then died, while the other side was unaffected. January 2021



Unwatered walnut tree



Watered walnut tree

**Photo 10**

Discharge from trickle pipe Oct 2022

In 2022, for example, from Saturday 22 until Wednesday 26 October water and contaminated material from the mine site exited this pipe every day.

This was just one of multiple events in October and November 2022, let alone all the years since mining commenced in 2012.

The consequences are shown in Photos 13, 14, 15 and 16

**Photo 11 Oct 2022**

Measuring the outflow from the trickle pipe or (as per the Environmental Protection Licence 12845 - Point 15). This pipe was to be monitored and measured by the miner. If the pH was below 6.5 the EPA was to be notified. If the daily volume limit was exceeded, they were to be notified.

October 2022 is just one occasion of many when the pH was low, 4.4, and the volume exceeded the limit. No action was taken. Peak flow was 82 000L in a 24 hour period at this time.

Despite testing the sump dam in 2015, 2020 and 2021, the EPL was never varied to ask BKJV Pty Ltd to measure heavy metals, for example, cadmium. BKJV Pty Ltd has never put a flow monitor on this pipe. Conducting this experiment was to determine how much contaminated water was flowing through our land.

Unfortunately, even though we were on our own land and Craig had helped install this pipe as part of the 2000 old tailings rehabilitation, the mining company called the police and accused Craig of trespass and malicious damage. However, the damage occurred after this when the mining company cut the fittings from the pipe so no further monitoring could occur.



Photo 12

Ground Monitoring Point 1 (GMP1) was established as a place to check the depth and quality of the groundwater near the mine on the downstream side. It is located approximately 100 metres from the TSF wall on the southern side.

In 2015 water in the pipe rose to the surface. This was an indicator, according to the 2003 design report, of a significant change and water should have been pumped from GMP1 back into the TSF.

Instead, we have estimated 1L per minute since 2015 has flowed through our land down to the Tyagong Creek (1 440L per day, 525 600L per year). In 7 and a half years that is 3 942 000 litres of contaminated water that has flowed through our land, plus what has exited the trickle pipe.

Initially it was the highly saline content that changed vegetation – see black spike reed in the photo – or killed trees and shrubs. See Photo 14.

Now it is the heavy metals causing issues. The NSW EPA no longer tests this point.

Photo 13

Another image of GMP1.

This shows material very similar to that which coated the poly pipe in Photo 7.

We were told by the NSW EPA September 2021 report that there was no link between the high iron in the dam and the mine site.

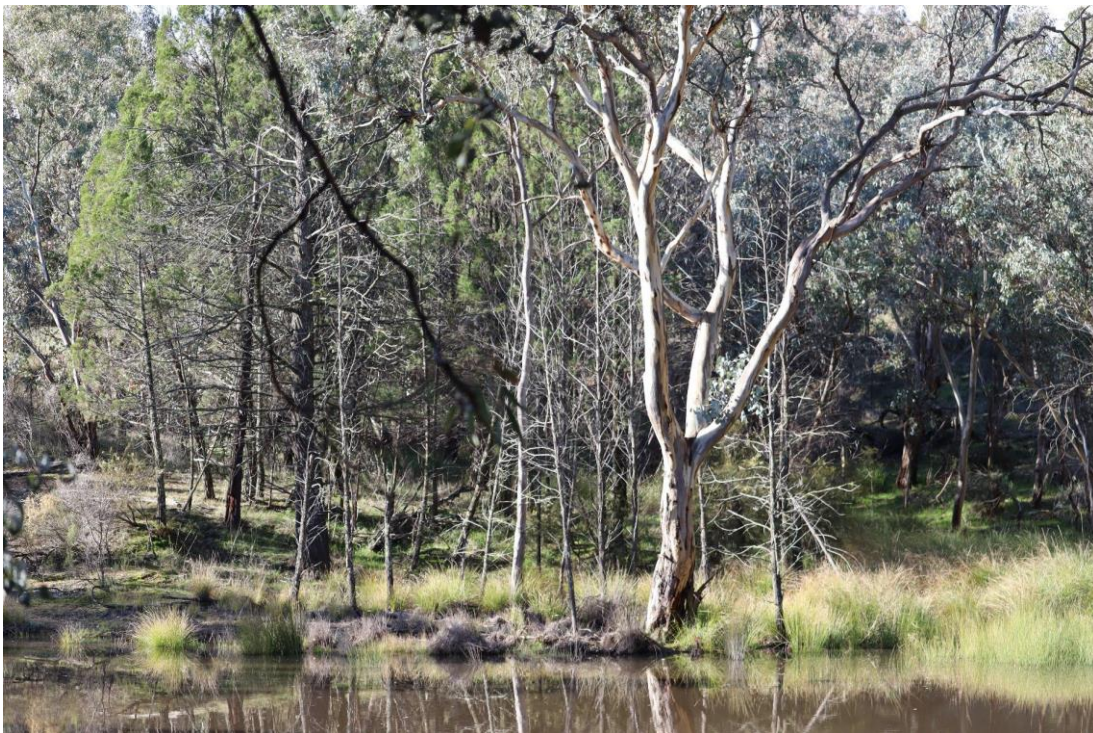


Photo 14 - 2021

This is directly below GMP1.
The white material is a combination of salt and heavy metals that have leaked from GMP1 since 2015.

The outflows from the trickle pipe at the base of the TSF have also contributed to these deposits.

It defies belief that with evidence such as this the 2020 NSW Minister for the Environment can tell us there is no contamination on our land.

**Photo 15 - 2020**

These dead trees surround the dam below the two dams at the base of the TSF and GMP1.

All southerly water from the mine site and the slow leak from GMP1 flows to this dam.

The water is black, lacking aquatic life and surrounded by dead and dying vegetation.

See **Photo 4** too



Photo 16

2015 out flow event leading to NSW EPA testing.

This is in the flowline below the TSF, heading towards the Tyagong Creek.

Photo 17

Another outflow in August 2020 in the gully system leading to the Tyagong Creek.

When low pH water mixes with normal pH water this foam event occurs.

This water source was the contaminated dams in the mine site and fresh farm water.

Unfortunately, due to the lack of water control on the mine site, water also flowed through the old tailings area.

Before the 2012-2014 mine project, this foaming effect was not seen in the gully and flume system built as part of the 2000 2001 Derelict Mine project.





Photo 18

This was taken in April 2023 with more taken in June 2023. It is approximately 2 metres from the edge of our farm, about to go under a road and then to the neighbour's property.

This was the image sent to the NSW EPA Bathurst office on 4 July 2023, along with the one below. There has not been a response to these concerns.

This again has the high iron content that is evident at GMP1, in our farm dams and where water collects on our farm.

Photo 19

July 2023

Dead trees in the Tyagong Creek at the point where it meets overland flow. The February 2023 electromagnetic survey showed this is where underground water carrying high levels of sulphites flows into the creek as well.

These trees are River Red gums specifically bred to be tolerant of highly saline soils/water.





Photo 20

August 2023 - A view to the east of our property of wheat and canola crops.

Our paddock is in the foreground. At low points in this paddock, despite drier weather than 2022, water pools.

Photo 21

Surface water covering hectares of farmland – 23 August 2023. As the slope shows, it is draining to the Tyagong Creek (tree line) and the area shown in Photo 17.

This water has been present for over two years. Its makeup has changed as the seepage from the water table has occurred.

In July 2023, it contained Copper, Chromium, Lead and Zinc at levels above the ecological threshold. (Envirowest Consulting)





Photo 22

23 August 2023

This algal growth is an indicator of acid mine drainage. This image is from the paddock in the above and below photographs.

Photo 23

23 August 2023

This is the same paddock and is visible from the Greenethorpe Bumbaldry Rd. This is why are neighbours have been asking, Why are your paddocks so wet?

The same outbreaks are occurring on the top of hills, as well as over farm roads and low spots in paddocks.



Photo 24

23 August 2023

These are wheel tracks from the tractor in the same paddock. Water has pooled here since February this year.

Attempts to prepare for sowing were aborted because of the lack of trafficability and contamination concerns.

These alluvial creek flats have always been highly productive for cropping and pasture and in 100 years have never had these outbreaks.



Another wet area, again not seen in 100 years of farming

Photo 25

Another wet area. These are parts of a paddock never exhibiting seepage before

This is now the wet area shown in August 2023 Photos 19 to 22.

Dead clover

Another line of wet surface area. This is coming directly towards the northern side of the house.

Shadeland, in relation to the Broula King mine site.

Attachments

Attachment 1 Department of Minerals Annual Report 2000/2001 – Mineral Resources New South Wales

Attachment 2a and 2b 2003 Tailing Storage Facility Design Broula King report Trevor Clarke and Associates P/L

Attachment 3 Map of BKJV gold mine/Day Sullivan property/photograph of TSF

Attachment 4 PowerPoint presented by Craig Day at the multi-agency meeting at Shadeland March 2012

Attachment 5 Extract AgTEM Electrical Resistivity Tomography for Groundwater Pollution Investigation – Bumbaldry Rd Cowra NSW Feb 2023 Groundwater Imaging)

Attachment 6 2021 NSW EPA test results

Attachment 7 NSW EPA Testing 18 January 2021

Attachment 8a Our letter to the Ministers

Attachment 8b Final letter from Matt Kean MP 13 October 2020

Attachment 8c Letter from Anthony Keon on behalf of John Barilaro 9 September 2020

Chronology of events at Broula King mine site

Date	Event
2000-2001	Rehabilitation of historic gold tailings under the NSW Government funded Derelict Mine project.
2003	Initial negotiations regarding the Broula King gold mining activity. See Attachment 2 2003 Tailing Storage Facility Design Broula King report. This report became part of the 2005 EIS and this EIS underpinned the 2005 DA issued by the Weddin Shire Council.
2004	<p>Memorandum of Understanding (MoU) was signed by Gareth and Craig Day (Shadeland Partnership) and Broula King Joint Venture. The agreement was to be reviewed every 5 years, but this clause was removed without the knowledge of Shadeland Partnership who assumed they were signing the final, agreed version.</p> <p>Only 10 acres of the entire mining lease was ever covered by this agreement, and it was for the specific purpose of a tailings storage facility (TSF) The area was to be surveyed, but this did not occur.</p>
2010	Kay Oxley, Mines Department, on site to discuss landowner concerns about the progress on the Broula King mine site and its impact on our land.
2012	<p>In March 2012, due to our concerns about the construction of the TSF, we took the initiative, with the help of the NSW EPA, to arrange a meeting at our house. The meeting brought together representatives from NSW EPA, Mines Department Weddin Shire Council and Mr. Alan Fraser of BKJV.</p> <p>Every representative present gave us a guarantee that oversight and management of the gold mine would be of the highest level.</p>
2012	<p>Construction of the TSF – wall was not built to specifications, the impervious kaolin clay lining material that we believe had been submitted to the Mines Department for testing was substituted with an inferior, highly sodic and dispersive material. 10 tonne of kaolin clay from Day’s Mine was provided to BKJV as a prelude to the agreed future clay sales, as per the 2005 EIS.</p> <p>The Council and Mines Department were notified but no action was taken.</p>
2012 to 2015	<p>The TSF was used during the mining operation – 2012 to 2014. During, and at the end of production, steps should have been taken to remediate the area and certainly to dewater the site as per the 2005 DA and the 2005 EIS, as well as the Mining Operations Plan submitted to the NSW Resources Regulator.</p> <p>No action was taken, and the mine went into Care and Maintenance and remains in that state.</p>
2015 to 2020	<p>Numerous emails, phone calls and meetings with government agencies, including meetings with the Weddin Shire Council.</p> <p>Reports to the NSW EPA hotline re water exiting the mine site.</p>

	Two NSW EPA test results – one general water and soil samples showing heavy metals exceeding acceptable limits; the other tested the foam materials in the gully network as a result of an outflow from the mine site – again levels of contamination on our property, well beyond the enclosed mine site area.
July 2020	Met with Steve Clipperton, Resource Regulator, Orange representative and Sheridan Ledger, NSW EPA Bathurst representative at Shadeland to outline our concerns about the lack of action at the BKJV site. The Mining Operations Plan (MOP) had expired in Oct 2018 and no action to rehabilitate the site had occurred.
August 2020	At the suggestion of Steve Clipperton, Resources Regulator, we wrote to the NSW Ministers for the Environment and Industry regarding our serious concerns about the mine site. We received a response from Matt Kean, then Minister for the Environment. Despite being briefed with information from the NSW EPA, which must have included two rounds of NSW EPA testing done in 2015 showing heavy metal readings and numerous photographs, the finding was ‘no contamination’ on our property.
January to September 2021	NSW EPA representatives, Sandie Jones and Andrew Helms, came on farm to discuss the January 2021 test results and see our concerns for themselves. As a result, Andrew came back in June and extensively water tested the property. These results were sent to us in September. The finding was the iron leachate was a consequence of drought and then rain. The Day family has been at Shadeland for 100 years. There have been many periods of drought and then rain, even in Craig’s memory, but never has there been this iron leachate problem. Many farm dams are now clear and red in colour. We believe underground water is affecting the dams and this water has been affected by the mine operation. September 2021 -The NSW EPA informed us no further testing would be undertaken on our property.
Oct 2021	Envirowest Consulting from Orange on site to conduct tests of water and soil samples at our expense. Report written.
Dec 2021	Email from NSW EPA confirming they have approved BKJV Pty Ltd to pump effluent and seepage from the TSF sump dam into the unlined ore pit.
2021- 2022	More emails and phone calls to government agencies. More meetings including one at Shadeland with NSW Resources Regulator and Weddin Shire representative.
Nov 2022	Envirowest Consulting from Orange on site to conduct further tests of water and soil samples at our expense. Report written.
Nov 2022	Meeting at Bathurst with 5 representatives from the NSW Resources Regulator and two from NSW EPA. Again, we asked what was being done to remediate

	<p>the BKJV mine site. We cited flow metre calculations from the trickle pipe well in excess of 80 000L per day flowing down the gully line to the Tyagong Creek at a pH range of 4 to 5. This exceeded ML 1617's Environmental Protection Licence's parameters.</p> <p>No action was taken as a result of this meeting despite Craig supplying photographs and documents highlighting our concern about the breach notice repair to the TSF wall. Safety concerns re remediation earthworks below the TSF wall, which is full of water, were expressed as the high water table would indicate potential for catastrophic wall failure.</p> <p>In January 2023 we informed the NSW EPA that BKJV Pty Ltd do not have our permission to conduct any earthworks for water management on our land.</p>
Feb 2023	Dr David Allan conducted an extensive AgTEM Electrical Resistivity Tomography for Groundwater Pollution Investigation – Day Sullivan paid for this investigation
June 2023	Envirowest Consulting from Orange on site to conduct tests of water and soil samples, including samples from the Bumbaldry and Tyagong Creeks. Report written.
July 2023	<p>Email sent to Andrew Helms and Sheridan Ledger NSW EPA re our concerns about iron leachate in the Bumbaldry Creek and dead and dying trees in the Tyagong Creek.</p> <p>To date, there has been no action regarding this email.</p>
July 2023	Concerns again raised with the Weddin Shire Council. Ongoing.
August 2023	<p>Letter to the Resources Regulator re-emphasising our concerns about the Broula King site and asking for remediation action. Explicitly stated that the only agreement/compensation has been for the portion of land used for the TSF. BKJV Pty Ltd does not have an arrangement in place for any other portion of the mining lease covering Day Sullivan land.</p> <p>Response expected Friday 1 September</p>