

**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**

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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

Bowdens Silver Project – Water Requirements and Water Sources

A large percentage of water sources for the mine's water requirements will be unlicensed.

Summary

Bowdens Silver Project was approved by the Independent Planning Commission made up of Commissioners Peter Duncan (Chair), Clare Sykes and Peter Cochrane on 3 April 2023.

The Commissioners have misunderstood the recommendation made by the Department of Planning in December 2022 regarding the water requirements, water sources and water access licences for the Project.

The Independent Planning Commission Bowdens Silver SSD-5765 Statement of Reasons for the Decision in 5.5.5 Water Access Licences (Paragraph 149) the Commissioners stated, *"The Department notes that the Applicant has secured water access licences to account for the maximum predicted water take from each water source during and post mining."*

The Department statement is incorrect, and the Department has been misled, there are no water access licences to account for the maximum water take from water (rainfall and runoff) captured in dams (excluded or otherwise) on the mine site. The Department has recommended the Bowdens Silver Project which does not have a licensed secure water supply or source for all its water requirements and on their recommendation the Independent Planning Commission's determination has approved the mine.

What condition could adequately protect other water users, employees, shareholders or anyone else from the impacts of the quantity of water to be taken in an average year or the lack of water available in a drought year or the excess water and overflows that will occur in a high rainfall year.

Modelling has shown that a maximum of 1011 megalitres of water contaminated by Bowdens will be caught annually under the Excluded Dams Regulation and this water is entirely unlicensed and is required by Bowdens for the processing of ore on the site.

Not only is the surface water predicted to be caught by Bowdens on the mine site entirely unlicensed much of that water, if managed competently, could be prevented from being contaminated and be diverted into the river system.

Bowdens do not have enough licensed water to process the ore they mine on their site.

Recommendations

1. The NSW Department of Planning withdraw their recommendation of Bowdens Silver Project and this project be reassessed by an independent body.
2. Restore Merit Appeal rights that were removed by the previous Minister for Planning, Hon Anthony Roberts, and restore these rights for all minerals mining projects approved during the caretaker period of the previous Government.
3. State Significant Developments provide evidence they have a secure high security water supply for the water needs of their project prior to SEARS being issued. Amendments to Water Supply Sources must not be accepted during or following the EIS process. Any change to water sources must result in a reissue of SEARs.
4. State Significant Developments provide approvals from the Australian Government Minister for the Environment under the EPBC Act prior to SEARs being issued.
5. State Significant Developments be referred to a Meeting of the Independent Planning Commission ensuring Merit Rights of a challenge in the Land and Environment Court are retained.
6. State Significant Developments are prohibited from employing any local government councillor, employee or contractor before, during or after the approval process.
7. Greenfields developments be required to evaluate the health and economic positive and negative impacts and benefits to those within a 5 kilometre radius of the development including to existing businesses, activities and land uses providing full time job numbers and annual capital and operating costs.
8. Greenfield developments be required to provide funds to Landcare NSW to engage independent experts to ensure developments are compatible with existing land uses.
9. NSWs DPE make all minutes of meetings and all other material regarding facilitating the approval process available to any interested party including shareholders, stakeholders and others in an easy accessible format.

Protecting our water resources

10. The Natural Resources Commission to review the allocation of water licences and exemptions from licencing in NSW <https://www.nrc.nsw.gov.au/>.
11. Harvestable Rights Dams used for purposes other than basic stock and domestic needs must be licenced and metered with an annual usage fee.
12. Harvestable Rights Dams cannot be larger than is allowed to be caught on the minimum subdividable area. For example, if the minimum block size is 100 hectares, then the size of the harvestable rights dam must be calculated on that area. No property will be permitted to

be subdivided if it contains a harvestable rights dam larger than is permitted on the subdivided area.

13. Excluded works must be charged a substantial fee to discourage the contamination of water. If water caught in excluded works is then used to process ore or for any other purpose a further substantial fee per megalitre must apply. Every attempt must be made to prevent water from being contaminated. All contaminated water must be caught and reused. Excluded works must be licenced, metered and usage listed on the Water NSW website.
14. State Significant Developments must not rely on exemptions or excluded works for any amount of their water supply. All contaminated water and water used on a site must be licenced. No harvestable rights will be allowed or permitted for mining operations.
15. Tailings Dams and Tailings Storage Facilities must not be located on, near or within 1 kilometre of a water course or spring of any order. No tailings seepage is acceptable. All waste from minerals mining including Potentially Acid Forming Ore must be removed from the site.
16. All minerals mine sites must be fully rehabilitated. Within 7 days of an EIS being recommended or approved a substantial bond is to be lodged with the Landcare Group in the area to facilitate rehabilitation of the site by a reputable external company.
17. All minerals mines must provide an independent water monitor under the guidance of the EPA.

Parliamentary Inquiry Terms of Reference

- The attached report at Tab A identifies that the Independent Planning Commission misinterpreted information provided to it by NSW Department of Planning and DPE Water regarding licencing exemptions for contaminated water captured on the mine site.
- The report refers to Parliamentary Inquiry Terms of Reference in particular
 - 1(b) the impact on catchments and waterways, affecting both surface and groundwater destined for, local and town water supplies, including rainwater tanks, and on aquatic biodiversity
 - (e) the effectiveness of the current regulatory framework in terms of monitoring, compliance, risk management and harm reduction from mining activities
 - (f) the effectiveness of current decommissioning and rehabilitation practices in safeguarding human health and the environment,
 - (h) whether the regulatory framework for heavy metals and critical minerals mining is fit for purpose and able to ensure that the positive and negative impacts of heavy metals and critical minerals mining on local communities, economies (including job creation) and the environment are appropriately balanced

Background of EIS Process

- August 2017 - The Bowdens Silver Project SSD- 5765 SEARs were issued with no external water supply
- June 2019 – SEARS were reissued including a 60 km pipeline from the Ulan Coal Mine
- The project is a controlled action under the EPBC Act with ID number 2018/8372
- May 2020 - EIS issued during COVID lockdown period
- June/July 2021 - Submissions based on an external water supply were responded to by Bowdens
- July 2021 – EIS Amendment to include the rebuilding of the 500kVa Transmission Line traversing the mine site
- March 2022 – Submissions were responded to by Bowdens
- March 2022 – EIS Amendment to remove the external water supply pipeline from Ulan Coal Mine. At this time a new SEARs should have been issued given the major water supply for the mine was removed and the Water Supply Amendment outlines plans for all water to be sourced entirely from the mine site.
- July 2022 – Minister Roberts referred the Bowdens Silver Project to a Hearing of the Independent Planning Commission and in doing so removed Merit Rights of Appeal in the Land and Environment Court
- October 2022 – Submissions were responded to by Bowdens
- Up to December 2022 - Independent Expert Reports responded to by Bowdens with inadequate time for the DPE to assess the responses before they released their recommendation.
- 22 December 2022 – NSW DPE released its Recommendation for the project (with no regard for the community on the second last business day before Christmas)
- Independent Planning Commission announced a Hearing to be held in Mudgee on 15, 16 & 17 February 2023
- February 2023 – Hearing held in Mudgee with 60 speakers opposed to the Bowdens Silver Project and 10 speakers in support of the project.
- 23 March 2023 – NSW State Election
- 3 April 2023 – Independent Planning Commission released its Determination.

Key statistics:

- 1496 megalitres of water is licenced in Lawsons Creek including licences for Domestic and Stock water and Irrigation water
- Works approvals for 1200 megalitres are held in Lawsons Creek
- A maximum of 1011 megalitres will be caught in rainfall and runoff on the mine site and that water is exempt from licences because it is or will be contaminated.
- An average of 924 megalitres of rainfall and runoff will be prevented from entering Lawsons Creek each year and will be held in excluded works dams on the mine site.
- Harvestable rights dams adjacent to the site are permitted to hold 180.1 megalitres but existing harvestable rights dams have not been accounted for.
- The Independent Planning Commission requires all water collected on the mine site to be licenced.
- No surface water licences are held for the mine site.

Implications

- The entire surface water (rainfall & runoff) caught on the mine site is unlicensed.
- The entire surface water (rainfall & runoff) caught on the mine site is exempt from licencing because it is or might be contaminated.
- Downstream water users will be severely affected and disadvantaged.
- There is no incentive for an operator to prevent water on their site from contamination.
- This contaminated and exempt water is not properly accounted for in the Murray Darling Basin Plan

Attachments

- Tab A – Bowdens Silver Project – Water Requirements and Water Sources
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Contact

B Wannan /

Tab A

Bowdens Silver Project – Water Requirements and Water Sources

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Executive Summary

Bowdens Silver Project was approved by the Independent Planning Commission made up of Commissioners Peter Duncan (Chair), Clare Sykes and Peter Cochrane on 3 April 2023.

The Commissioners have misunderstood the recommendation made by the Department of Planning in December 2022 regarding the water requirements, water sources and water access licences for the Project.

In the Statement of Reasons for the Decision in 5.5.5 Water Access Licences (Paragraph 149) the Commissioners state *"The Department notes that the Applicant has secured water access licences to account for the maximum predicted water take from each water source during and post mining."*

The Department statement is incorrect, the Department has been misled, there are no water access licences to account for the maximum water take from water (rainfall and runoff) captured in dams on the mine site.

Modelling has shown that a maximum of 1011 megalitres of water contaminated by Bowdens will be caught annually under the Excluded Dams Regulation and this water is entirely unlicensed and is required by Bowdens for the processing of ore on the site.

Clause 3 of Schedule 1 of the Water Management (General) Regulation 2018 allows an exemption for:

Dams solely for the capture, containment and recirculation of drainage and/or effluent, consistent with best management practice or required by a public authority to prevent the contamination to prevent the contamination of a water source, that are located on a minor stream.

Not only is the surface water predicted to be caught by Bowdens on the mine site entirely unlicensed much of that water, if managed competently, could be prevented from being contaminated and be diverted into the river system.

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Bowdens have not secured water access licences to account for to account for the maximum water take from each water take from each water source during and post mining.

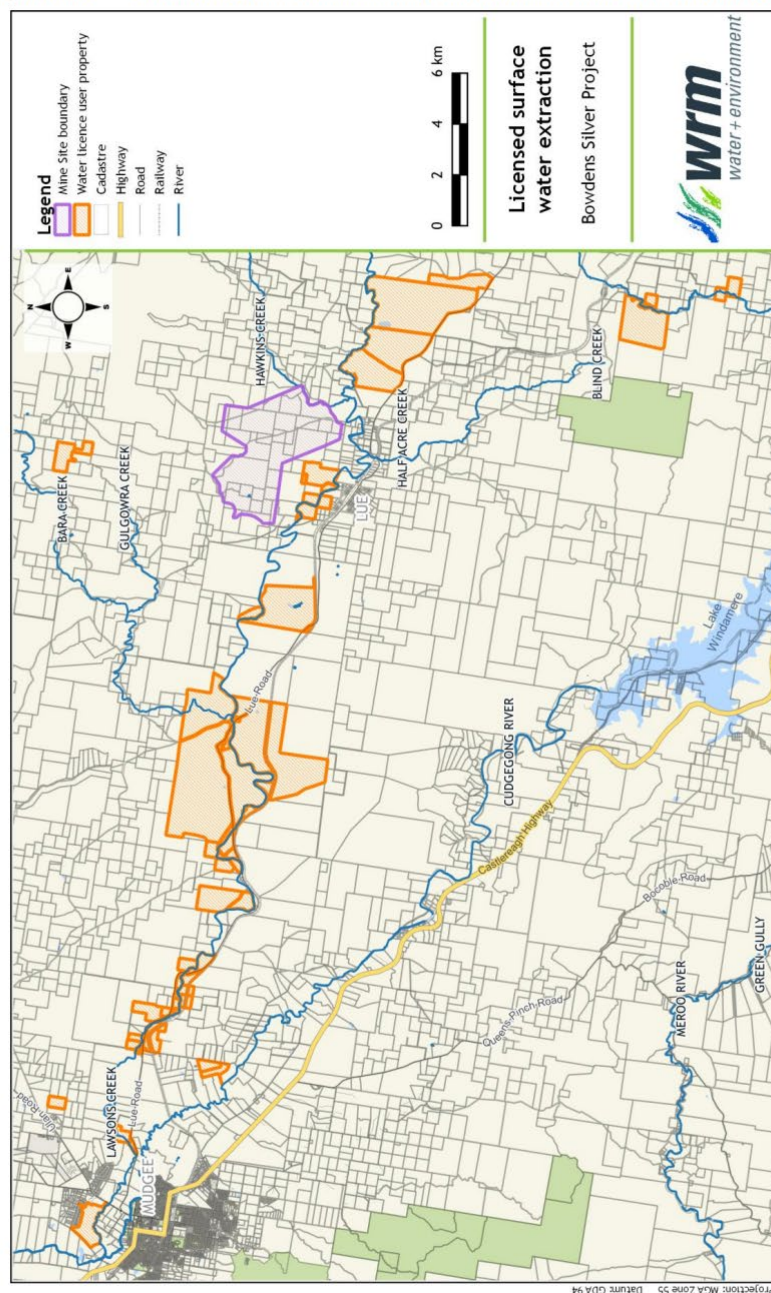
Table 3 below indicates there are no water access licences held by Bowdens to account for the maximum water take from water (rainfall and runoff) captured in dams on the mine site.

Table 3: Water licenses held by Bowdens Silver (source: AR Table 6)

Water Source	Purpose	Maximum Volume Required (ML)	Volume Secured (ML)
NSW Murray Darling Basin Porous Rock Groundwater Sources Order 2020 - Sydney Basin Groundwater Source	Pit dewatering	232.5	194 unit shares (equivalent to 194 ML/yr)
Controlled Allocation Order (Various groundwater sources)			38.5 (equivalent to 38.5 ML/yr)
NSW Murray Darling Basin Fractured Rock Groundwater Sources Order 2020 - Lachlan Fold Belt - Groundwater Source – (Other) Management Zone	Pit dewatering	1,040	1,480 unit shares (equivalent to 1,480 ML/yr)
Macquarie Bogan Unregulated and Alluvial Water Sources 2012 – Lawsons Creek Water Source	Water captured in TSF	123	139 unit shares
	Baseflow loss	14 (19.3 post mining)	

Figure 3.13 Licenced Surface Water Extraction from the Lawsons Creek Water Source below shows the mine site outlined in purple and clearly shows that there are no Water Access Licences on the mine site for Water captured in TSF or Baseflow loss as noted in Table 3 above. There are 1496 Water Access Licences to extract 1496 megalitres granted in Lawsons Creek. This water is only available if there is flow in the creek.

Figure 3.13 Licensed Surface Water Extraction from the Lawsons Creek Water Source



Bowdens holds no surface water licences for the anticipated rainfall and runoff they estimate to be an average 924 megalitres per year. Bowdens water expert Jacobs has used rainfall data from SILO and has modelled that this quantity of water will be available from rainfall and runoff.

See below Figure 7 and 8 from the NSW DPE Assessment and note that Figure 7 indicates that between 952 and 1094 megalitres of Plant Water (teal) is required annually and a large percentage of that water will be supplied from rainfall and runoff.

Figure 8 shows the Project's Water Sources and clearly (in yellow) between 271 and 1011 megalitres a year is planned to be sourced from rainfall and runoff. This rainfall and runoff water which is intended to be used for plant water or dust suppression or miscellaneous site demand is entirely unlicensed.

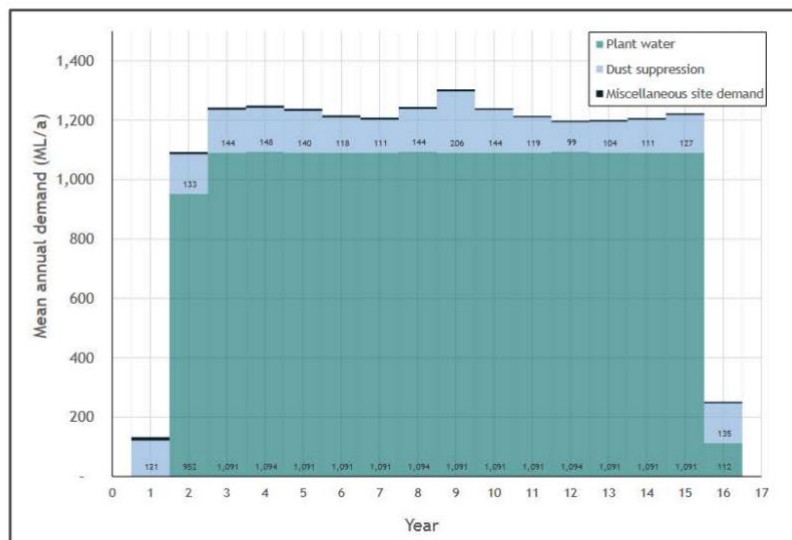


Figure 7 | Project Water Requirements

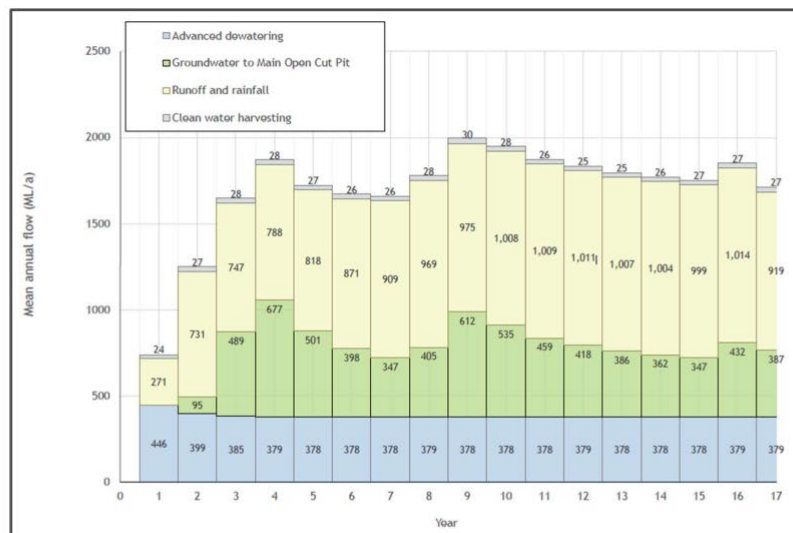


Figure 8 | Water Supply Sources

107. The water balance modelling for the mine indicates that, with the exception of extreme drought periods, there would be sufficient water to supply all site water demands. On average, water supply reliability for the processing plant demand would be 99.6% (96.3% under the worst-case

The Statement for Reasons for Decision paragraph 149 states that Bowdens would be permitted to capture up to 180.6 megalitres of water under its harvestable rights. The Commissioners have not

mentioned the licence requirements or how the balance of 743.4 megalitres on average each year will be sourced and licenced. Bowdens have not noted the water requirements of the land that they are using to calculate their harvestable rights which currently has 59 existing dams.

DPE Water have advised by email on 27 July 2023 (REF: MF23/1815) see Attachment 2

1. *Water take from dams excluded under Schedule 1(3) of the Water Management Regulation 2018 do not require a Water Access Licence.*
2. *Water take from dams that satisfy Harvestable Rights provisions of the Water Management Act 2000 do not require a Water Access Licence.*

Therefore according to DPE Water

- 180.1 megalitres included in Harvestable Rights provisions of the Water Management Act 2000 do not require a Water Access Licence
- 743.4 megalitres (av) will be sourced from excluded works dams that do not require a Water Access Licence

743.4 megalitres of unlicenced water captured by Bowdens under excluded works rules would represent about 50% of the entire unregulated Water Access Licences in Lawsons Creek. All water users in the Lawson Creek valley will be severely disadvantaged. There has been no flow data collected in Lawsons Creek enabling proper estimates of impacts on flows in the creek. Therefore any estimates of impacts on creek flows are not accurate and cannot be accepted by DPE Water or any other authority.

The Commissioners have not mentioned in the Statement of Reasons for Decision any exempt water being allowed to be collected or used on the site. While DPE Water advised the Commissioners of the Harvestable Rights provisions clearly the Commissioners misunderstood the exemptions for excluded works to capture contaminated water.

The Commissioners, by allowing exempt water to be used, are allowing an annual average of 743.4 megalitres of unlicenced surface water to be captured and prevented from entering the river system in addition to their harvestable rights allowance. They have stated in Paragraph 149 that the Applicant (Bowdens) have secured water access licences to account for the maximum predicted water take from each water source. The maximum water take (rather than the average) is 1011 megalitres less the Harvestable Rights allowed of 180.1 megalitres and equals 830.9 megalitres.

The Commissioners have been misled, the Departments statement is incorrect, the Applicant has not secured water access licences (of 830.9 megalitres) to account for the maximum water take from surface water runoff.

Excluded works exemptions for capturing contaminated water are an outdated rule that should not be applied to mining projects. See Attachment 1. In the case of the Bowdens Silver Project this exemption has enabled the provision of a large percentage of the water requirements of the mine. This is a State Significant Project which should have a secure water supply. This regulation was not intended to allow operators to contaminate their land in order to use the contaminated water that falls on their land to fulfil their water requirements.

In addition to the unfairness of the excluded works regulation Bowdens will not be required to pay annual entitlement fees and charges for the water they use as other water uses are required to do.

All water usage in unregulated water courses except water for stock and domestic purposes is metered. Every licence holder pays an annual entitlement fee for each megalitre on their licence, and they pay a usage fee for every megalitre pumped. All water users should be required to meter and account for the fees associated with their water usage.

Where is the incentive for unscrupulous operators who rely on excluded works for their water supply to prevent contamination of valuable and limited water resources.

Conclusion

The Independent Planning Commission has misunderstood the Assessment by the Department of Planning and has approved the Bowdens Silver Project based on incorrect and incomplete information.

A State Significant Project cannot rely on unlicensed rainfall and runoff for its water supply.

The Water Management (General) Regulation 2018 and in particular Clause 3, Section 1 must be reinterpreted to ensure that a landowner is not exempt from holding a Water Access Licence when they contaminate water on their land then capture, contain and recirculate that water to fulfil their water requirements.

No conditions have been imposed by the Independent Planning Commission that can adequately compensate other water users for the unlicensed rainfall and runoff water and unmetered water that Bowdens will take.

ATTACHMENT 1

Department of Planning and Environment

Factsheet

Interpreting excluded works dams

Interpreting excluded works dams

The Water Management (General) Regulation 2018's 'excluded work' exemptions may apply to the construction and use of certain dams.

How to interpret excluded work exemptions

Division 2 of Part 2 and Division 2 of Part 3 of the Water Management (General) Regulation 2018 establish exemptions from the requirement to hold a water access licence, a water use approval and a water supply work approval. Some of these exemptions relate to 'excluded works' as set out in Schedule 1 of the Regulation.

The purpose of this document is to articulate how some of these excluded work exemptions should be interpreted.

The excluded work exemptions discussed in this fact sheet all relate to the construction and use of a dam. The word 'dam' is not defined in the *Water Management Act 2000* or the Water Management (General) Regulation 2018. Therefore, for the purposes of these excluded work exemptions, the word 'dam' is given its ordinary and natural meaning. The Macquarie Dictionary includes the following definitions of 'dam' as a noun:

- a barrier to obstruct the flow of water, especially one of earth, masonry, etc., built across a river in order to create a reservoir for use as a water supply or in the generation of electricity
- a body of water confined by such a barrier
- an artificial water storage for farm use, constructed by creating a barrier, either a wall or earthworks, to contain run-off from a slope; tank
- any barrier resembling a dam (def. 1).

Dams to prevent contamination of a water source

Clause 3 of Schedule 1 of the Water Management (General) Regulation 2018 allows an exemption for:

Dams solely for the capture, containment and recirculation of drainage and/or effluent, consistent with best management practice or required by a public authority (other than Landcom or the Superannuation Administration Corporation or any of their subsidiaries) to prevent the contamination of a water source, that are located on a minor stream.

This exemption allows landholders to construct a dam to capture, contain and recirculate drainage or effluent that would otherwise result in a water source being contaminated.

Landholders can take and use the captured water on their property without a water access licence, water use approval or water supply work approval. This exemption encourages landholders to reduce water quality risks to local and downstream water sources.

There are 4 elements to this exemption:

The work must be a dam.

The dam must be used solely for the capture, containment and recirculation of drainage and/or effluent to prevent the contamination of a water source.

The dam must be:

- (a) consistent with best management practice, or
- (b) required by a public authority (other than specified entities),

The dam must prevent the contamination of a water source.

The dam must be located on a minor stream.

Clean water can be captured

The exemption does not explicitly apply only to the capture of contaminated or 'dirty' water. The words "to prevent the contamination of a water source" allows for a broader interpretation where the captured drainage or effluent water does not have to have been contaminated before the capture occurred. Therefore, this exemption can apply to the capture of water that is not already contaminated, if it would have otherwise flowed over land which would result in it contaminating a water source. For the exemption to apply in these circumstances there needs to be either clear evidence that without the capture of that water it would have resulted in a water source being contaminated or a legal requirement (such as a condition of development consent) to prevent clean water runoff from becoming contaminated and entering downstream water sources.

However, those using this exemption are encouraged to continue separating clean water from dirty water and continue to categorise their dams as being either:

- **Dirty water:** Drainage or effluent water captured from active areas, run-off from infrastructure and run-off from disturbed catchments, or
- **Clean water:** Drainage or effluent water captured from undisturbed catchments.

As evidenced in some of the guidance material currently being used by industry (see 'Best management practice obligations' below), this is considered to be good practice and would make assessment of compliance with this exemption easier for water users and Government.

It is recognised though, that such separation may not always be possible and that the exemption may still apply in these circumstances.

The *Water Management Act 2000* does not define the words 'drainage' or 'effluent'. Therefore, these words should be given their ordinary and natural meaning. The Macquarie Dictionary includes the following definitions of 'drainage':

- the act or process of draining
- a system of drains, artificial or natural

- that which is drained off

In this exemption, the word 'drainage' is a noun and therefore, the third definition "that which is drained off" is relevant.

Under this definition the water running off of the land is considered to be drainage as it is in the process of draining from the land, i.e. 'that which is drained off'.

The Macquarie Dictionary includes the following relevant definitions of 'effluent':

- flowing out or forth
- that which flows out or forth; outflow
- a stream flowing out of another stream, a lake, etc
- the outflow from sewage during purification
- liquid industrial waste.

Captured water can be used for any purpose

The requirement for dams to be 'solely for the capture, containment and recirculation of drainage' does not mean that captured water cannot be used. This is because the word 'solely' relates only to the dam and not the water captured by it. Additionally, the word 'recirculation' applies to the use of the dam rather than the use of the water captured by it. That is, the dam can be used to recirculate water, which implies that the captured water is able to be taken from the dam and used for some purpose and whatever is not consumed be allowed to flow back into it. Therefore, water captured under this exemption can be used for any purpose provided it does not result in the contamination of a water source. It can also be released back into a water source, provided it would not contaminate that or other water source.

This exemption refers to dam being 'solely for the capture, containment and recirculation of drainage'. To comply with this exemption, a dam must not have a secondary or additional purpose, such as to store water taken under an access licence. However, if the top of a dam wall is used as an access road but the only use of the dam is as a dam to capture, contain and recirculate drainage and/or effluent, then it should still be considered to be an excluded work.

Best management practice obligations

The construction and operation of a dam under this exemption must be consistent with 'best management practice' or as 'required by a public authority'. However, the exemption does not currently specify how best management practice is determined.

It is recognised that industry and the Department have been guided by Landcom's 2004 publication: "Managing Urban Stormwater: Soils and Construction Volume 1 Fourth edition", and the mining industry also uses "Managing Urban Stormwater: soils and construction. Volume 2E - mines and quarries". These documents are generally used by the mining industry to guide mines on how to construct a dam to achieve various purposes, such as to prevent contamination.

The Australian Government (2016) publication, Water Stewardship: Leading Practice Sustainable Development Program for the Mining Industry provides guiding principles and a strategic

framework for managing mine water related issues. It outlines appropriate management of water systems on mine sites and specifically discusses approaches and principles for managing water quality. Importantly, it discusses the prevention of contamination of water sources as requiring streamflow, and drainage and/or effluent to always remain separate. In practice, onsite streamflow should be diverted away from the dam, re-entering downstream of the dam avoiding opportunities to mix with the recirculating drainage and/or effluent.

However, to date the Department has not endorsed a particular document, principle or practice as being 'best management practice'. This does not mean that the exemption has no effect. It means proponents must be able to show that they have:

- investigated what best management practice may be (the documents referred to above will continue to be useful in this regard)
- attempted to construct their dam in accordance with it
- can justify any departure from possible best management practice, in terms of potential water source contamination outcomes,

This applies except where construction and operation of the dam is otherwise consistent with a requirement of a public authority.

As defined in the Dictionary to the *Water Management Act 2000*, public authority means a:

- Minister of the Crown
- Public Service agency
- statutory body representing the Crown
- statutory State owned corporation (or any of its subsidiaries) within the meaning of the [State Owned Corporations Act 1989](#)
- council or county council within the meaning of the [Local Government Act 1993](#).

It does not include any person or body declared by the regulations not to be a public authority.

However, for the purpose of the exemption, public authority does not include Landcom or the Superannuation Administration Corporation or any of their subsidiaries.

A dam required by a public authority (where a public authority requires a proponent or landholder to construct a dam) does not need to be consistent with best management practice for the purposes of the exemption.

Contamination of a water source

Neither the *Water Management Act 2000* nor the Water Management (General) Regulation 2018 set out how contamination of a water source should be assessed and determined. Therefore, the word 'contaminate' takes its ordinary meaning which is defined in the Macquarie Dictionary as including "to render impure by contact or mixture". Such a broad definition could make assessment of compliance with this exemption exceptionally difficult. For example, even if dams are constructed to best management practice, contamination of a water source could still easily occur. The Department will consider possible amendments to this exemption which could:

- align more closely with definitions in the *Protection of the Environment Operations Act 1997* such as “pollution” and “pollution incident”
- allow the Minister to specify particular water quality indicators or thresholds required to be taken into account when assessing whether the water source would likely become contaminated or polluted.

Dam must be on a minor stream

A dam constructed under this exemption must be on a ‘minor stream’. Clause 3 of the Water Management (General) Regulation 2018 defines ‘minor stream’ to be:

- a. any stream or part of a stream —
 - i. the location of which is specified in the hydroline spatial data, and
 - ii. that is identified as a first or second order stream, or part of such a stream, as determined in accordance with the system set out in Schedule 2 of the Regulation, and
 - iii. that does not maintain a permanent flow of water, being a visible flow that occurs on a continuous basis, or would so occur if there were no artificial abstractions of water or obstruction of flows upstream, and
 - iv. that does not at any time carry flows emanating from a third or higher order stream as determined in accordance with the system set out in Schedule 2 of the Regulation, or
- b. any stream or part of a stream the location of which is not specified in the hydroline spatial data.

For the purposes of paragraphs (a)(i) and (b), a stream is specified in the hydroline spatial data if it is identified as a watercourse (however described) in accordance with the legend or terms of that data.

Soil erosion dams

Clause 1 of Schedule 1 of the Water Management (General) Regulation 2018 allows an exemption for:

Dams solely for the control or prevention of soil erosion –

- (a) from which no water is reticulated (unless, if the dam is fenced off for erosion control purposes, to a stock drinking trough in an adjoining paddock) or pumped, and
- (b) the structural size of which is the minimum necessary to fulfil the erosion control function, and
- (c) that are located on a minor stream.

Neither the *Water Management Act 2000* nor the Water Management (General) Regulation 2018 define the term ‘soil erosion’. The Macquarie Dictionary definition of ‘erosion’ includes, “the process by which the surface of the earth is worn away by the action of water, glaciers, wind, waves, etc”. Whilst it is a natural process, it can be accelerated by human activities (such as through land clearing). The term ‘control or prevention of soil erosion’ means actions undertaken to restrict loss of soil. Examples of such dams could include:

- streambed grade control structures
- check dams
- leaky dams
- gully plug dams.

Soil erosion dams are exempted from requiring a water access licence, a water use approval and a water supply work approval to encourage landholders to manage soil erosion on their properties to minimise water quality impacts downstream.

Water can be reticulated or pumped if the dam is fenced

Whilst the exemption refers to the fencing of a dam for erosion control purposes, this does not mean that the dam must be fenced off for the exemption to apply. It means that water captured in the dam can be reticulated if the dam is fenced off. This is intended to encourage landholders to prevent stock and pest grazing or trampling, which would:

- damage the vegetation in the vicinity of the dam
- possibly damage the dam itself
- impact on its erosion control function.

However, the reticulated water can only supply a stock trough (i.e., one trough) which must be in a paddock that adjoins the fenced off area of the dam. This is because the exemption refers to ‘a’ stock trough and ‘an’ adjoining paddock. The use of ‘a’ implies one stock trough and the use of ‘an’ rather than ‘any’ implies that only one adjoining paddock could be serviced by the dam for which an exemption is sought. Whilst the size of the stock trough is not specified, these constraints indicate

that the trough and water is to have limited use. Therefore, the exemption should be interpreted as not including provision of water for intensive livestock production.

This Department proposes to amend this exemption to clarify that the reticulated water cannot be used for intensive livestock production.

Neither the *Water Management Act 2000* nor the Regulations define 'reticulated'. Therefore, its ordinary meaning should be applied. The Macquarie Dictionary definition for 'reticulate' includes "to cause (water, etc) to pass through a system of pipes". In terms of the use of the word 'pumped' the exemption should be interpreted to mean the pumping of water from the dam is not permitted for any purpose other than the reticulation of water to a stock trough in a paddock that adjoins the fenced off area of the dam.

Dam must be the minimum size

A dam constructed under this exemption must be the minimum size necessary to fulfil the erosion control function. The means by which the minimum size is determined is not defined and an assessment of what would be necessary to fulfil the erosion control function will vary depending on the type of soil, expected weather conditions and slope of the land. Therefore, proponents will need to be able to demonstrate that they have undertaken an assessment of what would be necessary to fulfil the erosion control function and that the dam has been constructed in accordance with it.

The exemption refers to the term 'solely,' which means that the dam must not be used for any other purpose except to capture water in order to control and prevent soil erosion. This means the exemption does not apply if the dam is being used for other purposes such as capturing water under a harvestable rights order or storing water that has been taken under a domestic and stock right, native title right or access licence.

However, if the top of a dam wall is used as an access road but the only use of the dam itself is as a dam for the control or prevention of soil erosion, it should be considered be an excluded work.

Dam must be on a minor stream

A dam constructed under this exemption must be on a 'minor stream'. Clause 3 of the Water Management (General) Regulation 2018 defines 'minor stream' to be:

- a. any stream or part of a stream —
 - i. the location of which is specified in the hydroline spatial data, and
 - ii. that is identified as a first or second order stream, or part of such a stream, as determined in accordance with the system set out in Schedule 2 of the Regulation, and
 - iii. that does not maintain a permanent flow of water, being a visible flow that occurs on a continuous basis, or would so occur if there were no artificial abstractions of water or obstruction of flows upstream, and
 - iv. that does not at any time carry flows emanating from a third or higher order stream as determined in accordance with the system set out in Schedule 2 of the Regulation, or

Flood detention and mitigation dams

Clause 2 of Schedule 1 of the Water Management (General) Regulation 2018 allows an exemption for:

Dams solely for flood detention and mitigation –

- (a) from which no water is reticulated or pumped, and
- (b) that are located on a minor stream

Landholders are able to construct a dam under this exemption if it is solely for flood detention and to mitigate the risk of flooding downstream. A reticulated water supply system or pump cannot be directly connected to the dam. This effectively means that the captured water cannot be extracted from the dam and used for any purpose.

This exemption refers to a dam being ‘solely for flood detention and mitigation’. This means the exemption does not apply if the dam is being used for other purposes such as capturing water under a harvestable rights order or storing water that has been taken under a domestic and stock right, native title right or access licence. It also means that the dam cannot be used for recreational purposes.

Captured water can be released

The exemption states that the water cannot be reticulated or pumped, which means that a reticulated water supply system or pump cannot be directly connected to the dam and the water captured by it. Whilst the intent of this exemption is to allow the capture of water in order to attenuate downstream flows, it does not impose any constraints on how a dam might achieve this. For example, the exemption does not state whether it only applies to flood retarding basins and thereby excludes any structure with outlet works that can be operated.

For a dam to serve a flood detention and mitigation purpose it may be necessary for the water contained in the dam to be released between flood events. The release would ensure that space is created within the dam to enable it to fill with water during a subsequent flood event and protect downstream communities and environments from flood impacts. However, it is recognised that dams with outlet works that can be operated are unlikely to be used “solely for flood detention and mitigation”. Nevertheless, under the current wording of this exemption, the release of water from the dam and any legal downstream extraction of it, does not invalidate the exemption.

Best management practice guidelines

Whilst this exemption does not require dams to be constructed in accordance with best management practice guidelines, the following useful guidance material exists:

- [Australian Rainfall Runoff: A Guide to Flood Estimation](#) provides guidance for mining, agriculture and infrastructure projects. It outlines two potential risks and approaches to managing the risks

for mining, associated with inundation of the mine and its operation and changes to flood behaviour for communities upstream and downstream.

- Dams Safety NSW has a range of relevant guidance materials on its website including factsheets and guidelines.

Dam must be on a minor stream

A dam constructed under this exemption must be on a 'minor stream'. Clause 3 of the Water Management (General) Regulation 2018 defines 'minor stream' to be:

- a. any stream or part of a stream —
 - i. the location of which is specified in the hydroline spatial data, and
 - ii. that is identified as a first or second order stream, or part of such a stream, as determined in accordance with the system set out in Schedule 2 of the Regulation, and
 - iii. that does not maintain a permanent flow of water, being a visible flow that occurs on a continuous basis, or would so occur if there were no artificial abstractions of water or obstruction of flows upstream, and
 - iv. that does not at any time carry flows emanating from a third or higher order stream as determined in accordance with the system set out in Schedule 2 of the Regulation, or
- b. any stream or part of a stream the location of which is not specified in the hydroline spatial data.

For the purposes of paragraphs (a)(i) and (b), a stream is specified in the hydroline spatial data if it is identified as a watercourse (however described) in accordance with the legend or terms of that data.

Environmental management dams

Clause 4 of Schedule 1 of the Water Management (General) Regulation 2018 allows an exemption for:

Dams approved in writing by the Minister for specific environmental management purposes –

- (a) that are located on a minor stream, and
- (b) from which water is used solely for those environmental purposes.

Proponents seeking to construct a dam under this exemption require written approval from the NSW Minister for Water (or equivalent) or delegate before doing so. The approval must clearly define the environmental management purpose/s that the dam and the water captured by it is being used for. Therefore, before an approval can be provided by the Department under delegated authority, officers will need to be satisfied that there is a clear and demonstrable environmental objective. In this regard, agreement with other relevant Government agencies may need to be sought as to whether the environmental purpose is valid. For example, the environmental purpose may need to be consistent with the objectives of a relevant water sharing plan or any other environmental planning instrument.

The environmental purpose could also be as set out by a legal requirement. For example, a condition of development consent may require water to be diverted around an activity to avoid loss of flow to a downstream water source. This exemption could apply to a dam required to comply with such a condition, provided written approval specifying the environmental purpose has been obtained.

If required to demonstrate compliance with this exemption, the landholder will need to provide an original version of the written approval which includes the specified environmental management purpose and show how the dam and any use of the water captured by it is in accordance with that approval.

The exemption refers to the term 'solely'. This is in relation to the use of the captured water rather than the use of the dam. Water may be taken from the dam under this exemption. However, that water must not be used for a purpose other than the environmental management purpose specified in the Minister's written approval.

This does not mean that the exemption cannot also result in the dam providing some incidental benefit that is in addition to the environmental outcome being sought. For example, the dam could also be used for recreational purposes.

Dam must be on a minor stream

A dam constructed under this exemption must be on a 'minor stream'. Clause 3 of the Water Management (General) Regulation 2018 defines 'minor stream' to be:

- a. any stream or part of a stream –
 - i. the location of which is specified in the hydroline spatial data, and

- ii. that is identified as a first or second order stream, or part of such a stream, as determined in accordance with the system set out in Schedule 2 of the Regulation, and
- iii. that does not maintain a permanent flow of water, being a visible flow that occurs on a continuous basis, or would so occur if there were no artificial abstractions of water or obstruction of flows upstream, and
- iv. that does not at any time carry flows emanating from a third or higher order stream as determined in accordance with the system set out in Schedule 2 of the Regulation, or
- b. any stream or part of a stream the location of which is not specified in the hydroline spatial data.

For the purposes of paragraphs (a)(i) and (b), a stream is specified in the hydroline spatial data if it is identified as a watercourse (however described) in accordance with the legend or terms of that data.

Licences, approvals and exemptions

Go to www.dpie.nsw.gov.au/licensing-and-trade for more information on licensing, approvals and any applicable exemptions.

WaterNSW is responsible for water access licences and associated approvals required by rural landholders, rural industries and developments which are not state-significant development, or state-significant infrastructure.

Contact us

- Call WaterNSW on 1300 662 077
- Email WaterNSW on Customer.Helpdesk@waternsw.com.au
- Visit www.waternsw.com.au

Controlled activity approvals

The department is responsible for all CAAs and issues licences and approvals for large water users such as water utilities, mines and irrigation corporations.

- Call the department on 1800 633 362
- Email waterlicensing.servicedesk@dpie.nsw.gov.au
- Visit www.water.dpie.nsw.gov.au

Reporting suspicious water activity

To make a confidential report of suspicious water activity:

- Use NRAR's online reporting form at www.nrar.nsw.gov.au/report-suspicious-water-activities
- Phone 1800 633 362

- b. any stream or part of a stream the location of which is not specified in the hydroline spatial data.

For the purposes of paragraphs (a)(i) and (b), a stream is specified in the hydroline spatial data if it is identified as a watercourse (however described) in accordance with the legend or terms of that data.

ATTACHMENT 2

Letter from Mitchell Isaacs, Chief Knowledge Officer, DPE Water Group

Dated 27 July 2023

Ref MF23/1815

Our ref: MF23/1815

Ms Bronwyn Wannan

27 July 2023

Subject: Bowdens Silver Project – surface water licensing

Dear Ms Wannan

Thank you for your email of 10 July 2023, to the Hon Rose Jackson MP, Minister for Water. The Minister has asked that I respond on her behalf.

I understand you have concerns regarding unlicensed surface water take for the Bowdens Silver Project and with advice provided from DPE Water (OUT23/3551) which responded to questions from the Independent Planning Commission (IPC). To assist with this matter, I have included information below on applicable requirements under water legislation and provided an overview of key comments provided in OUT23/3551.

Surface water take must be authorised via either a licence or an exemption under the *Water Management Act 2000* (WMA 2000) or the *Water Management (General) Regulation 2018* (WM Reg 2018). In the case of Bowdens Silver Project, water captured in dams and subsequently removed, is to be the primary method of surface water take. Surface water take from dams that are located on third order streams or higher (according to the Strahler method of classifying streams), such as Walkers Creek where the Tailings Storage Facility is to be located, must be accounted for with a water access licence. Where surface water take is to occur from dams on minor streams (ie. first order or second order) the following two aspects are most relevant for this project.

1. Water take from dams excluded under Schedule 1(3) of the WM Reg 2018 do not require a Water Access Licence. These dams include those used to capture contaminated water and dams used to prevent contamination of a water source. Further advice on excluded works is available in a factsheet at the following link: [Interpreting excluded works dams \(nsw.gov.au\)](https://www.nsw.gov.au/interpreting-excluded-works-dams)
2. Water take from dams that satisfy Harvestable Rights provisions of the WMA 2000 do not require a Water Access Licence.

It is noted the Bowdens Silver Project proposes capture and take of water via excluded dams which does not require a water licence. This water take will need to be implemented consistently with the requirements of the water regulatory framework.

In terms of your concerns regarding DPE Water's response to questions from the IPC about contaminated water at the Bowdens Silver Project, I can confirm that DPE Water provided information in accordance with water legislation. This advice noted that Harvestable Rights provisions were not applicable for contaminated water and that dams which prevent contamination of a water source that satisfy Schedule 1(3) of the WM Reg 2018 are exempt from the need to hold a water access licence. Further to this,

DPE Water advised that water taken from such dams is not considered under the relevant water sharing plan. I note that there is a regular audit and review process into water sharing plans, oversee by the NSW Natural Resources Commission.

I can also advise that DPE Water is required to be consulted on the preparation of a Water Management Plan for the Bowdens Silver Project. A Water Management Plan is a key tool for detailing the water supply, storage and transfer infrastructure, in addition to establishing the monitoring, management and mitigation of impacts. This plan would include details of measuring water take and the ability to verify impact predictions. DPE Water's review of the Water Management Plan would seek to ensure the activities are consistent with the water regulatory framework and the relevant development consent conditions.

Compliance with water legislation and conditions of water access licences is undertaken by the independent Natural Resources Access Regulator (NRAR). NRAR has put the mining sector on notice in recent months with several investigations and regulatory actions undertaken. You can find more information on NRAR online at nrar.nsw.gov.au.

Thank you again for your email. I have asked _____, Senior Project Officer be available should you need further information or wish to discuss this matter further.

Yours sincerely,

Mitchell Isaacs
Chief Knowledge Officer
DPE Water Group