

## **INQUIRY INTO COAL SEAM GAS**

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# **Mining and Coal Seam Gas Approvals; Protecting Water Resources**

## **Policy**

**110829**

**DRAFT ONLY**

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## Introduction

NSW Irrigators' Council (NSWIC) represents more than 12,000 irrigation farmers across NSW. These irrigators are on regulated, unregulated and groundwater systems. Our members include valley water user associations, food and fibre groups, irrigation corporations and commodity groups from the rice, cotton, dairy and horticultural industries.

This document represents the views of the members of NSWIC. However each member reserves the right to an independent view on issues that directly relate to their areas of operation, or expertise, or any other issues that they may deem relevant.

## Executive Summary

This document sets out the policy of NSWIC in respect of the issuing of permits for mining, including for coal seam gas, across this state, for both exploration and operations.

*The preservation of sustainable resources for agriculture – including water – must be absolute in addressing mining exploration or operational licence applications.*

*NSWIC advocates a strict “no regrets” approach to the licencing of both exploration and operations in mining in respect of water sources.*

NSWIC believes that a strong aquifer interference policy must be developed, extended to all water sources, be of regulatory strength (not simply policy) and rigorously implemented and enforced.

## Background

Our constituency and expertise is linked to water, both surface and ground. It is on that basis that this policy was drafted and accepted. NSWIC claims significant expertise in water resource management, but not in respect of mining, gas extraction or processing.

This policy is limited to the potential impacts of mining, including coal seam gas extraction, on water resources. This does not preclude NSWIC – or any of its Member organisations – from holding additional or separate policy positions on other issues with the mining industry that affect our stakeholders.

NSWIC is not opposed to the mining industry nor to its further development. We recognise that there may be significant social and economic benefits which in many instances can be delivered with limited negative impact to communities, to businesses and to the environment. We recognise that benefits may accrue at an individual level, a community level, a regional level and a state-wide level. In light of a sustained attack on productive water use, any additional economic activity generated by mining may be much needed by many communities.

NSWIC believes that the local and regional social and economic costs of mining activity may, in many instances, outweigh the benefits. A full analysis of both costs and benefits across the long term must be undertaken by independent experts and fully published.

By its nature, resource extraction is a short to medium term activity. Once the resource has been extracted, the business ceases to operate. Agriculture, on the other hand, is a sustainable long term activity. Sensibly managed, its use of renewable resources allows for food and fibre production indefinitely. We believe that this fact must underpin a basic policy proposition; the preservation of sustainable resources for agriculture – including water – must be absolute in addressing mining exploration or operational licence applications.

## Potential Impacts

NSWIC has considered the potential impacts that mining activity may have on water resources. We have considered both ground and surface water sources, as we believe that both stand to be impacted by mining operations.

Irrigators are subject to significant obligations in respect of access, reliability, quality and impacts. These are largely contained with the *Water Management Act* and subordinate legislation. That is, irrigators face a legislative regime to manage, preserve and protect the water resource. We believe that mining and coal seam gas operations must be subject to a process that is *at least* as prescriptive and enforced.

Whilst it would seem a simple process to regulate and monitor individual operations to avoid impacts, NSWIC is concerned at the likelihood of cumulative impacts of multiple operations in and around individual water sources.

### *The Water Resource – Access*

Physical access to the water resource – and its integrity – is a non-negotiable threshold requirement for NSWIC. There must be no circumstances under which the watercourse or aquifer is damaged or altered either permanently or temporarily.

Examples of such damage might be cracking an underground aquifer such that water is able to escape or become depressurised. In surface water, the diversion of a watercourse or escape to, say, an open cut that would not otherwise have occurred is a similar example, as is land and watercourse subsidence from long-wall operations.

Examples of temporary damage might include transfer of drilling fluids in the period prior to permanent casing.

### *The Water Resource – Reliability*

The value of a water resource and an associated extraction licence to an irrigator is not only access to it, but the reliability of it. Irrigation necessarily involved the precise application of water resources at precise times. Impact on the reliability at both short and long term temporal intervals will have a material negative impact on irrigators.

Examples of reliability impacts might include temporary loss of availability.

### *The Water Resource – Quality*

NSWIC is concerned at diminution of water quality from mining operations including salinity impacts and the addition of chemicals to water sources. It is our policy that contaminated water – be it through mining process or an adjunct to operations – is utterly unacceptable and must be vigorously guarded against. Any returned water must be of a quality *at least* equal to or higher in quality to independently assessed benchmark data obtained prior to operations commencing. NSWIC will not accept averaging of water quality testing, but requires that all returns meet this standard.

Examples of such impacts may include incursion of saline water and other contaminants to either surface or ground water as part of extraction operations. The injection of chemical-laden liquids to achieve hydraulic fracturing clearly has the potential to significantly diminish water quality, aside from the potential damage to the physical structure of an aquifer.

### *The Water Resource – Availability and Use*

NSWIC is aware that mining operations and exploration are often significant users of water. We absolutely oppose the granting of water use exemptions in either case. Mining, by its nature, is a commercial activity. Commercial options to obtain water for use exist in the form of tradeable water entitlements. NSWIC insists that all mining use of water must be on the basis of licensed extraction to avoid third party impacts associated with further allocation in fully allocated systems.

## **Measures to Avoid Impacts**

NSWIC recognises that there are essentially three separate phases of mining activity where water resources must be protected; exploration, operation and post-operation.

We believe that a risk management approach needs to be adopted to avoid impacts.

NSWIC believes that each phase must be adequately regulated. We are content for this to be achieved by a Regulation based on an aquifer interference policy in conjunction with Water Sharing Plans. We require that in areas where Water Sharing Plans are not yet finalised, any mining activity – including exploration – must be deferred until such time as the Plan is finalised and active. We further require that the aquifer interference policy and regulation be extended to all water sources, not simply underground aquifers. We may be content with alluvial aquifers being included which essentially protect surface watercourses.

Council is concerned that there may be instances where no alluvial aquifers are situated adjacent to surface water courses, such as where a surface water course passes through a hard rock zone. In these instances, Council requires a methodology where a deemed alluvial aquifer exists or another legislative measure is used to enforce the conditions of the aquifer interference regulation.

Council is further concerned at impacts occasioned by interaction between deep and shallow aquifers. We understand that a stacked aquifer policy may address this, but reserve comment until such policy is understood.

An approved suite of tests – including isotope testing – must be undertaken (at least quarterly) and reported against by a suitably qualified independent entity at the expense of the proponent at each of the phases listed below.

### ***Exploration***

NSWIC acknowledges that the exploration phase of mining operations may pose a comparatively lower risk to water sources than full operations in some cases. At the same time, we believe that potential damage at this phase remains significant and hence protection mechanisms must be strongly made and rigorously enforced.

In the first instance, we believe that a “no negative impacts to third parties” approach must be adopted, save and except to levels that would be permitted pursuant to a Water Sharing Plan. Where an exploration permit is sought, the applicant must be able to prove that operations under the permit will not negatively impact third parties in respect of water resources. Such proof must be independently verified.

Where an applicant is required to provide proof of any matter, NSWIC believes that the burden must be that of “beyond reasonable doubt”.

We believe that an assessment of potential damage must be undertaken by a suitably qualified independent third party. This assessment must take into account potential cumulative impacts. Such an assessment may utilise a risk management matrix that allows variance for high value or strategically important areas to ensure that the response meets the potential threat. Based on such assessment, a security bond mechanism must be determined and enforced such that the state holds a financial instrument capable of fully compensating for any damage occasioned.

The risk management approach and possible resultant matrix must also take into account the environmental and water resource history of the applicant. Where an applicant has a poor history – breaches of entitlements by it or an associated entity – or said applicant has no history in managing environmental and water resource impacts, their potential threat level must be increased.

Any take of water – either deliberate or inadvertent – as an adjunct to exploration must be fully accounted. Where threat levels are assessed on a higher scale according to the proposed matrix, this accounting must be required up front. That is, an operator must hold an entitlement (temporary or permanent) equivalent to the potential take from exploratory operations at the commencement of such operation.

Regular oversight and reporting against conditions on permits must be required and full transparency of the results must be guaranteed.

## ***Operation***

NSWIC believes that the operation phase has the greatest potential to cause significant damage to water sources and, as such, advocates that the strictest conditions and requirements be imposed at this phase. It is our position that all of the requirements for exploration permits must be continued and built upon, together with additional requirements being imposed.

As the potential for damage is significantly more considerable, the security bond mechanism and risk matrix analysis must again be used but must result in significantly higher values of bond held. The risk matrix analysis must include consideration of performance against requirements at the exploration phase both on the current proposal and on any previous operations by the proponent or any associated entity.

A full benchmarking process of the immediate and surrounding areas of the proposed operations must be conducted prior to the commencement of any activity. This must be completed by an independent entity and the results must be fully transparent and available publicly. It is against this benchmark data that all compliance must be measured over the course of operations.

As a minimum, quarterly testing of water quality, water quantity, pressure and availability must be undertaken and reported against the benchmark data. Again, this testing must be undertaken by an independent entity and be made publicly available. Where the risk matrix indicates a higher risk operation, testing at a greater frequency must be considered.

Any negative impact reported against a benchmark must be treated as a strict liability offence. That is, unless the operator can prove (on the balance of probabilities) that the damage was occasioned by an event or events *other than* those for which they are responsible, they must be held liable for the damage occasioned.

### *Produced Water*

NSWIC recognises that operation of both mining and coal seam gas extraction routinely results in water being extracted, either subsequent to injection or as a tangent to operations.

As a basic premise, NSWIC notes that all extractions (other than recovery of injected water) must be pursuant to a Water Access License.

Where extracted water is of lower quality than the surrounding source and needs to be either stored or disposed of, a strict management regime must be required and rigorously enforced. Storage must be effected by a “closed system” that allows no opportunity for leakage or evaporation. Treatment of contaminated water (be it saline extracted water or recovered water from operations that contains chemicals) must include filtration to remove heavy metals. Independently verified testing of both input and output to treatment must be undertaken and made publicly available.

Any water to be reinjected or released in any fashion must be to *at least* the quality of the surrounding sources based on independently tested and publicly reported benchmark data.

### ***Post Operation***

By their nature, mining operations have a limited lifespan. The impacts on water resources, however, may not be restricted to that same lifespan.

It is the position of NSWIC that applications for operations permits must include an identifiable and third party verified withdrawal strategy with respect to water sources. That is, before a permit is issued and operations allowed to commence, an exit strategy that deals with how water management issues will be dealt with on withdrawal must be provided and independently verified.

At the conclusion of operations, independent verification of potential damage that may still be occasioned (taking into account the withdrawal strategy) must guide the quantum of security bond to be kept and the period over which it must be kept. The same verification must address the potential water requirements (leeching, inadvertent take and the like) that the site is likely to demand. Those demands must then be fully accounted (by acquisition of entitlement) and held until proof is presented that such requirements are not longer present.



### ***Other Matters***

At the time of writing, NSWIC is concerned at the capacity of Government regulatory bodies to deal with the anticipated scope of mining and coal seam gas exploration, operations and post-operation requirements pursuant to this policy. Without adequate resourcing – and efficient use of those resources – Council believes that the most rigorous of policy will be meaningless.

We specifically believe that industry self-regulation and self-reporting is meaningless and must be abandoned as a protocol or measure of protection, specific or implied.

Breaches of conditions at any phase must be considered a “reportable incident”. The State authorities must, at the expense of the operator, provide a publicly accessible report of the breach and must notify stakeholders directly of the breach, what measures were taken to avoid the breach and what additional conditions will be imposed as a result of the breach.

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