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Coal Seam Gas Consultation
Reform and Compliance Branch
Environment Protection Authority
PO Box A290
Sydney South NSW 1232

Email: pirm@environment.nsw.gov.au

Dear Sir/Madam,

Submission on the Draft *Protection of the Environment Operations Amendment (Coal Seam Gas Activities) Regulation 2013*

EDO NSW welcomes the opportunity to address the changes proposed by the Environment Protection Authority (EPA) to the *Protection of the Environment Operations Act 1997* (NSW) (POEO Act) and the *Protection of the Environment Operations (General) Regulation 2009* (NSW) (POEO Regulation).

EDO NSW is a community legal centre dedicated to educating the community, providing legal advice and representation, and engaging in law reform and policy processes. We have extensive experience advising in respect of mining law, including the broad regulatory regime applicable to coal seam gas (CSG) exploration and production. As such, we are well placed to comment on the extent and ramifications of the draft *Protection of the Environment Operations (Coal Seam Gas Activities) Regulation 2013* (Draft Amendment Regulation).

EDO NSW is broadly supportive of the POEO Regulation insofar as it proposes to make the EPA the chief regulatory authority for CSG exploration and production activities, and requires proponents undertaking CSG exploration, assessment or production to hold an environment protection licence (EPL). However, we recommend that the Draft Amendment Regulation be amended across five areas in order to maximise its effectiveness.

1. Definitions

CSG exploration, assessment and production are defined in the following manner:

9A Coal seam gas exploration, assessment and production

1) *This clause applies to the following activities:*

Coal seam gas assessment/production, meaning:

- a) *the assessment of reserves of coal seam gas for which a petroleum exploration licence, assessment lease or production lease **is required** [our emphasis] under the Petroleum (Onshore) Act 1991, or*
- b) *the commercial production of coal seam gas for which a production lease **is required** [our emphasis] under the Petroleum (Onshore) Act 1991,*

Coal seam gas exploration, meaning the exploration of reserves of coal seam gas for which a petroleum exploration licence **is required** [our emphasis] under the Petroleum (Onshore) Act.

EDO NSW submits that the definitions contained in the Draft Amendment Regulation may be reasonably interpreted as only applying to CSG exploration, assessment and production activities that are required to obtain a petroleum exploration licence (PEL) or petroleum assessment lease (PAL) *after* the Draft Regulation commences. Specifically, the words “is required” may be interpreted to mean “must be obtained” (as it is yet to be obtained). Accordingly, exploration, assessment and production activities for which a PEL or PAL was issued prior to the commencement of the Draft Regulation may be exempt from the requirement to acquire an EPL.

Recommendation:

It is arguable that the ambiguity of this clause could give rise to costly litigation seeking to clarify its meaning. It is therefore submitted that the definitions of “coal seam gas assessment/production” and “coal seam gas exploration” ought to read (amendments are bold and underlined):

9A Coal seam gas exploration, assessment and production

- 1) *This clause applies to the following activities:*

Coal seam gas assessment/production, meaning:

- c) *the assessment of reserves of coal seam gas for which a petroleum exploration licence, assessment lease or production lease is required **(including where the exploration licence, assessment lease or production lease has already been obtained)** under the Petroleum (Onshore) Act 1991, or*
- d) *the commercial production of coal seam gas for which a production lease is required **(including where the exploration licence, assessment lease or production lease has already been obtained)** under the Petroleum (Onshore) Act 1991,*

Coal seam gas exploration, meaning the exploration of reserves of coal seam gas for which a petroleum exploration licence is required **(including where a petroleum exploration licence has already been obtained)** under the Petroleum (Onshore) Act.

2. Exemptions

The Draft Regulation exempts the following activities from the definitions of CSG assessment/production, and CSG exploration:

2) *However this clause does not apply to the following activities:*

- a) *geological mapping and airborne surveying,*
- b) *sampling and coring using hand-held equipment (but not if the sampling or coring is for the purpose of a groundwater bore),*
- c) *geophysical (including seismic) surveying and **downhole logging** [our emphasis],*
- d) *accessing of areas by vehicle that does not involve the construction of an access way such as a track or road,*
- e) *the recovery, **obtaining or removal** [our emphasis] of coal seam gas in the course of coal mining.*

EDO NSW is concerned that the exemptions applying to downhole logging and obtaining or removing CSG in the course of coal mining may be too broad. First, where downhole logging results in drilling through an aquifer or aquifers, we submit that there is cause to require the proponent to obtain an EPL. We make this recommendation in light of the fact that CSG exploration activities are often undertaken in the vicinity of alluvial aquifers, which are particularly shallow.¹ Second, “obtaining or removal” of CSG in the course of coal mining may be interpreted to include fugitive (methane) emissions which would not otherwise be covered by an EPL for coal mining activities. This being the case, it is necessary to amend the clause to require all uncaptured CSG emissions that occur in the course of coal mining activity to require an EPL.

Recommendation:

We therefore recommend amending clauses (2) (c) and (e) in the following manner (amendments are bold and underlined):

¹ For example parts of the Hunter Valley region include a significant number of alluvial aquifers. See for example: <http://www.anra.gov.au/topics/water/overview/nsw/gmu-hunter-valley-alluvium.html>; NSW Department of Water and Energy (now defunct), *Water sharing plan - Hunter unregulated and alluvial water sources: Guide*, 2009.

- c) geophysical (including seismic) surveying and downhole logging (**but not if the downhole logging involves drilling through an aquifer**);...
- e) the recovery, obtaining or removal of coal seam gas in the course of coal mining (**but not including uncaptured coal seam gas emissions**).

3. Water discharges

EDO NSW notes that current NSW Government policies envisage that appropriately treated CSG water may be released to the environment.² However we are concerned that even treated CSG water will contain a variety of chemicals at differing concentrations. As indicated in a recent report produced for the Queensland Government,

*CSG water contains significant but variable concentrations of salts, with Total Dissolved Solids (TDS) values typically ranging from 1000 to more than 10 000 mg/L. It also has a high Sodium Adsorption Ratio (SAR) **and may contain other contaminants (e.g. hydrocarbons and other chemicals such as boron, fluoride and metals and metalloids) in concentrations that may exceed thresholds in the national water quality guideline values (ANZECC and ARMCANZ 2000)** [our emphasis]. The constituents of CSG water therefore have the potential to cause environmental harm if released to land or waters through inappropriate management.³*

Accordingly, CSG water has the potential to impact on aquatic ecology. As such, mandatory conditions are necessary to minimise these impacts.

Recommendation:

Where the EPA licences riverine discharges of treated water from CSG facilities, we strongly recommend the licence include a mandatory condition requiring discharges to meet the 95% level of species protection as specified in the ANZECC Guidelines.⁴

4. Air discharges

The threshold factors in the Schedule 2 of the Draft Amendment Regulation have been rolled over from existing thresholds for “natural gas and methane production” under “petroleum and fuel production”.⁵ As a result, no specific work has been done

² See for example: *NSW Aquifer Interference Policy; NSW Code of Practice for Coal Seam Gas Fracture Stimulation*.

³ Biggs, AJW, Witheyman, SL, Williams, KM, Cupples N, de Voil CA, Power, RE, Stone, BJ, (2012). *Assessing the salinity impacts of coal seam gas water on landscapes and surface streams*. August 2012. Final report of Activity 3 of the Healthy HeadWaters Coal Seam Gas Water Feasibility Study. QLD Department of Natural Resources and Mines, Toowoomba. p. 1. Accessed on 07 May 2013 and located at: <http://www.nrm.qld.gov.au/water/health/healthy-headwaters/feasibility-study/pdf/csg-irrigation-salinity-risk-assessment.pdf>.

⁴ Australian and New Zealand Environment and Conservation Council, Agriculture and Resource Management Council of Australia and New Zealand, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, 2000, at 3.4.5.

⁵ POEO (General) Regulation, Schedule 1.

to determine whether these thresholds are appropriate for the current industry environment.

These rules were developed when natural gas collection was occurring on a much smaller scale. It would be appropriate for the EPA to consider cumulative impacts and whether maximum limits for emissions should be set.

This would bring EPA's monitoring of CSG activities into line with the Load Calculation Protocol (LCP). Relevantly, the LCP states that "Emission testing must be comprehensive enough to identify the assessable pollutants and determine the load of pollution emitted over all modes of plant operation."⁶

The LCP further recognises that monitoring can be continuous or periodic, while certain pollutants in some industry sectors have standard emission factors that can be used to calculate the load.

To avoid doubt, the type of monitoring required for CSG operations should be specified in the Draft Amendment Regulation.

Recommendation:

Given the level of uncertainty surrounding emissions from CSG operations at this time, all EPL's for CSG activities should include a mandatory condition requiring continuous source monitoring for all potential emissions (that is, all pollutants at all wells). This condition should be accompanied by an explicit statement indicating that monitoring does not authorise pollution and that action to reduce emissions may be required.

5. Mandatory monitoring – methane emissions

As noted under points 3 and 4 of this submission, mandatory conditions concerning water and air discharges (including monitoring of discharges), should be incorporated into all EPL's for CSG activities.

Given current concerns about methane emissions from CSG operations,⁷ we would also recommend imposing a specific, mandatory condition requiring continuous monitoring of methane. Indeed, we consider a mandatory condition of this nature vital insofar as methane is a particularly potent greenhouse gas.⁸

Recommendation:

All EPLs for CSG activities should include a specific, mandatory condition requiring continuous monitoring of fugitive methane emissions from each well head. This condition should be accompanied by an explicit statement indicating that monitoring does not authorise pollution and that action to reduce emissions may be required.

⁶ <http://www.environment.nsw.gov.au/licensing/lblprotocol/index.htm>

⁷ <http://www.scu.edu.au/coastal-biogeochemistry/index.php/69>

⁸ <http://www.epa.gov/outreach/scientific.html>

Please do not hesitate to contact us if you have further questions regarding our recommendations.

Yours sincerely,

EDO NSW

A handwritten signature in blue ink that reads "Emma Carmody". The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

Emma Carmody
Policy and Law Reform Solicitor