

NARRABRI CCC MONTHLY UPDATE

MARCH 2016

The following is a monthly update for the Narrabri CCC regarding activities undertaken by the NSW Environment Protection Authority (EPA) relating to PEL 238 (Narrabri Gas Project). It includes both activities undertaken relating to Environment Protection Licence 20350 and the EPA's functions conducted under the NSW Gas Plan.

Attachments to this month's update:

- CSG Leak Detection Inspections - 9/2/16 – 10/2/16
- Twitter @NSWEPA
- Feature articles
 - Leak Detection – Adopted Procedures and Measuring Equipment Used by the EPA
 - CSG and Hydrogen Sulphide Gas (H₂S) – Early Detection by Human Nose vs EPA Equipment
- Map of Narrabri LDAR Inspections – February 2016

EPA ACTION ITEMS SINCE LAST NCCC MEETING

Nil – Meeting was postponed

INVESTIGATIONS

Background

19 February 2013 the EPA became responsible for investigating environmental incidents that occurred during coal seam gas activities under the provisions of the Protection of the Environment Operations Act 1997 (POEO Act) and issued Environment Protection Licences.

1 July 2015 the EPA commenced its new role as the lead regulator for compliance with and enforcement of conditions of approval for gas activities in NSW, including consent conditions and activity approvals issued by other agencies (excluding work health and safety). In carrying out this role the EPA will work with the relevant experts and NSW Government agencies.

Gas activities must comply with a broad range of regulatory controls, including Acts, regulations, codes of practice, titles, approvals and other controls.

The prioritisation of investigations is determined using a risk assessment for investigations that considers the level of environmental impact and the likelihood of environmental harm occurring.

Recent

February 2016 – Alleged spill at Santos premises.

On 15 February, a story started to trend on Facebook alleging that there had been a 35,000 litre spill at an unmanned Santos facility. The EPA contacted Santos about their NSW facility and was informed that there had been no spill at Leewood or at any other of Santos' Pilliga sites. Further investigation revealed that the spill had occurred sometime earlier in Queensland.

No EPA action was required.

<http://www.epa.nsw.gov.au/epamedia/EPAMedia16010501.htm>

RUNNING LOG - OLD INVESTIGATIONS PEL 238 OUTCOMES

INCIDENT	OUTCOME
<p>March 2013 <u>Biblewindi Water Treatment Facility Pond</u> Liner failure</p>	<p>11 Feb 2014 EPA issued Penalty Notice for s120 Pollution of waters A Pollution Reduction Program (PRP) was added to EPL 20350 (Environment Protection Licence) requiring the development of a Remediation and Monitoring plan and the implementation of these.</p>
<p>March 2013 <u>Tintsville Ponds</u> Detection elevated levels salinity and metals</p>	<p>Insufficient evidence to determine if the changes detected in groundwater were the result of leaks from the Tintsville ponds or were from natural factors. A PRP was added to EPL 20350. http://www.epa.nsw.gov.au/epamedia/EPAMedia15051501.htm</p>
<p>February 2014 <u>Namoi Waste</u> Storage of Santos drilling mud onsite at</p>	<p>6 May 2014 EPA issued Namoi Waste Corp with a Penalty Notice for breach of s145 of the POEO Act.</p>
<p>January 2015 <u>Santos Dewhurst Southern</u> Water Flow Line</p>	<p>No breach of EPL 20350 identified. Santos varied operational practices for high point vents following negotiations with the EPA. http://www.epa.nsw.gov.au/epamedia/EPAMedia15051501.htm</p>
<p>September 2015 <u>Bohena Creek</u> Piezometer located in creek</p>	<p>No regulatory action required.</p>

<p>January 2016 <u>Leewood Water Treatment Facility</u> Alleged discharge of sediment laden water</p>	<p>The rainwater discharge followed heavy rain. Santos undertook immediate works to prevent further discharge from the site installing coir mats and construction of bunding.</p> <p>EPA inspected site and determined no environmental harm and that no regulatory action was required</p>
<p>January 2016 <u>Santos Operations in the Piliga</u> Compliant received via Environment Line advising a “foamy caramel coloured” material lay on the roadside near operation site.</p>	<p>EPA inspected the site and collected samples.</p> <p>Analysis determined it was a natural event, likely due to the decomposition of organic material</p> <p>No further action was required</p>

EPA ACTIVITIES

The following tables present actions undertaken by the EPA

INSPECTIONS – Leak Detection and Repair (LDAR) and Hydrogen Sulphide (H₂S)				
SITE ID	DATE INSPECTED	REASON	ACTION/OUTCOME	STATUS
Tintsville 2H, 3H, 4H & 6 Narrabri Gas Field	9/2/2016	Undertake Leak detection monitoring	No reportable leaks detected	No H ₂ S detected
Dewhurst 26, 27, 28 & 29 south Pilot Narrabri Gas Field	10/2/2016	Undertake Leak detection monitoring	No reportable leaks detected	No H ₂ S detected.

MEDIA

MEDIA

08 Feb 2016 – Twitter @NSW_EPA

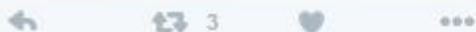
- EPA overseeing gas monitoring at Santos Narrabri operations as part of the EPA’s Methane Emissions Project

<http://www.epa.nsw.gov.au/epamedia/EPAMedia16010501.htm>



NSW EPA @NSW_EPA · Feb 8

EPA overseeing gas monitoring at Santos Narrabri operations as part of the EPA's Methane Emissions Project



MATTERS OF INTEREST

Leak Detection – Adopted Procedures and Measuring Equipment Used by the EPA

The NSW Environment Protection Authority (EPA) undertakes leak detection monitoring as part of its inspection programs when regulating Coal Seam Gas (CSG) activities.

When inspecting Coal Seam Gas sites, the EPA undertakes monitoring for possible gas leaks. The EPA checks for methane, as it accounts for approximately 98% of natural gas, and is colourless, odourless and flammable.

Typically, there are two types of gas detection monitor units that are used by the EPA: The *Eagle 2 Gas Monitor* which detects a wide ranges of gases, including methane and Hydrogen Sulphide at various concentration levels and; the *DP-IR* detection monitor which operates an infrared optical gas detection system to detect methane at lower concentrations without being affected by other gas or fumes.

The EPA regularly undertakes leak detection works in conjunction with the licensees to ensure the site is operating effectively, and that any possible leaks are identified and rectified immediately.

Coal Seam Gas (CSG) and Hydrogen Sulphide Gas (H₂S) – Early Detection by Human Nose vs EPA Equipment

Sulphur is present in organic environments; Hydrogen Sulphide (H₂S) gas is typically a product of microbial action from the breakdown of this organic matter.

H₂S occurs in oxygen-depleted environments for example:- volcanoes, deep ocean, groundwater, composting and gastrointestinal locations.

When released into the environment, H₂S dissipates into the atmosphere and may form sulphur dioxide or sulphuric acid.

The presence of H₂S gas is detected by the human nose before the most sensitive commercial meters registers its existence. The characteristic rotten egg odour of H₂S can be detected by the human nose from 0.005 to 0.008 ppm. These levels do not affect human health.

NSW coal-bed methane reservoirs are known as 'sweet' reservoirs and generally produce methane-rich gases with incidental volumes of H₂S. In this instance, H₂S should be contained within gas gathering infrastructure and not exposed to the atmosphere or present as an odour risk, except in the case of trace entrained emissions in produced water.

Sulphur dioxide SO₂ is the product of combusting (flaring) H₂S, but in the event of incomplete combustion, H₂S may be emitted into the atmosphere.

The Eagle2 gas detectors used by EPA field staff take readings from 0-100 ppm, with a resolution of 0.5ppm. This detector will emit an alarm when the ongoing low level Occupation Safety and Health Authority standard reaches 10 ppm.

The EPA also uses SUMMA canister sampling which allows for the collection of gas samples for laboratory analysis.

Laboratory detection limits of H₂S are at 10ppbV or 0.01ppm - the detection limit of 0.01ppm is still above odour thresholds.

Narrabri LDAR Inspections – February 2016

