

LINC ENERGY & THE CHINCHILLA UCG PROJECT

This statement has been prepared by Cluff Natural Resources following recent revelations in the Australian press based on leaked government reports into contamination allegedly arising from Linc Energy's onshore underground coal gasification (UCG) project near Hopeland in Queensland, Australia.

PROJECT BACKGROUND

The Chinchilla site has been the location of 5 discrete phases of R&D operations for UCG which were operated from 1999 to 2013. All operations targeted a 10m thick coal seam located at a depth of 120-140m below surface. Early operations utilised older 'Russian' style UCG technology via vertical wells while the latest project used more modern directionally drilled wells.

In February 2015 the QLD Department of Environment and Heritage Protection (DEHP) detected elevated levels of carbon monoxide, hydrogen and hydrogen sulphide during drilling operations in the Hopeland area which may have been the by-product of a failed UCG project. This resulted in the implementation of a 314km² 'excavation caution zone' and further investigations.

In a public statement published on 12 June 2015 the DEHP stated ***"Extensive testing of local drinking water, supplies, rivers and groundwater, including stock and domestic bores has not uncovered any contaminants that exceed relevant human and livestock health guidelines."***

ROOT CAUSE OF ALLEGED CONTAMINATION

Extracts from a report by Gilbert and Sutherland, environmental consultants commissioned by the Queensland Government, leaked to the press in August 2015 confirmed the nature and extent of the contamination. The report contained the following information:

"In August 2007, Linc injected air into the coal seam to create a connection between its G2 production and injection bores. Not only was the pressure high enough to fracture the coal seam, it was also high enough to fracture the overburden"

This activity could have potentially led to the creation of new pathways by which syngas and other by-products associated with the UCG process could have escaped the gasification chamber in an uncontrolled manner.

WHY THIS INCIDENT COULD NOT OCCUR AT CLNR'S KINCARDINE PROJECT

It has long been recognised that shallow UCG projects can potentially lead to contamination of groundwater and soils due to the inability of low strength formations and low hydrostatic head to contain the pressures observed during the UCG process. Studies by the Coal Authority and DTi both recognised this issue and recommend that UCG should not take place at depths less than 600m.

- 1) CLNR's project at Kincardine is targeting coal seams at a depth of 1,000m bringing significant protection in terms of confining hydrostatic pressures, rock strength and separation from near surface waters.

- 2) The design of CLNR's gasification panels means that there is no requirement to use high pressure air to create a connection between the injection and production wells. This connection will be made mechanically during the drilling process by ensuring the wells intersect in the coal seam.

The rigorous site selection process and design of CLNR's subsurface infrastructure ensures that the very specific operational issues, which allegedly resulted in the contamination of soils around the Linc Energy site, could not be replicated at the proposed Kincardine UCG site.

Any further queries can be emailed to kincardine@cluffnaturalresources.com or made by phone on 02078872630.