

Environmental Incident Report – Clarence Colliery

Development Consent:	DA 504-00
EPL Licence Number:	EPL 726
Licensee:	Clarence Colliery Pty Limited Level 18 1 Market Place Sydney NSW 2000
Licenced Premises:	Clarence Colliery – Off Bells Line of Road, Clarence
Mining Lease Title:	CCL 705
Title Holder:	Coalex Pty Limited and Clarence Coal Investments Pty Limited
Consent Granted:	21 March 1990
Consent Expiry Date:	31 December 2026

Incident Notification

This Incident Investigation Report is submitted alongside the notification of an environmental non-compliance that was reported on 26th of March 2024 to:

- a. The NSW Department of Planning, Housing and Infrastructure (DPHI), in accordance with Schedule 5, Condition 5B of DA 504-00. Submission of this report follows the notification of the incident to the DPHI (reference DA504-00-PA-50);
- b. The NSW Environment Protection Authority (EPA), in accordance with section 148(8) of the *Protection of the Environment Operations (POEO) Act 1997* and condition R2.2 of Environment Protection Licence (EPL) 726;

a. Incident Details

i. Details of the incident, and how and when it was detected

At 8:50 am on Wednesday 13 March 2024, a routine monthly grab sample was taken from a continuous discharge at EPL Licenced Discharge Point 2 (LDP002). The monitoring detected an concentration limit exceedances of dissolved zinc, cobalt, and total phosphorus.

ii. Exceedance of the limits

The following results were detected:

- Dissolved zinc result of 0.029mg/L, the EPL limit is 0.008mg/L
- Dissolved cobalt result of 0.0028mg/L, the EPL limit is 0.0025mg/L
- Total phosphorus result of 0.03mg/L, the EPL limit is 0.02mg/L

iii. Actual and/or Potential Environmental Harm

Due to the very small concentration of the exceedance paired with elevated levels of dissolved, zinc (0.026mg/L and 0.04mg/L) and cobalt (0.009mg/L and 0.008mg/L) in upstream and downstream samples, it is considered unlikely that actual and/or potential material harm has been caused to the environment.

iv. The name, address and business hours telephone number of employees or agents of the licensee, or a specified class of who witnessed the event

ALS Coal - Lithgow
Adriana Hernandez – Environmental Project Officer
3/16 Donald St, Lithgow NSW 2790

v. Action taken by the licensee in relation to the event

The Clarence Colliery Water Treatment Plant (WTP) operation was ensured to be functioning as designed. A Plant upgrade is currently underway, with a partial upgrade expected to be completed by the end of April 2024. The full upgrade is expected to be completed by the end of September 2024.

b. Outcomes of the incident investigation and identification of the cause of the incident

Prior to discharge at LDP002, mine water is treated at the site WTP, which involves precipitating metals in an Aeration Tank which are then removed via a process using Dissolved Air Flotation (DAF). Water is then transferred to the Treated Water Lagoon where it is acid dosed to reduce the pH to a level that meets the EPL limit.

The investigation findings from our recent measurements on the untreated mine water that serves as the primary source for the Water Treatment Plant (WTP) areas follows; our analysis has revealed elevated concentrations of dissolved; zinc and cobalt in this water source. Specifically, the dissolved concentration zinc was measured at 1.41mg/L, while cobalt was measured at 0.247mg/L. These concentrations surpass the typical levels observed in the raw mine water, based on historical data.

One of the significant challenges posed by this situation is the simultaneous occurrence of elevated levels of multiple elemental species. The presence of increased zinc and cobalt concentrations, along with other potential contaminants, creates a diverse array of elemental contaminants in the untreated mine water. This diversity complicates the task of achieving

effective metal precipitation throughout the wide range of pH values encountered in the treatment process.

Metal precipitation is a crucial step in the water treatment process for removing heavy metals from contaminated water. However, the efficiency of this process heavily relies on maintaining a target pH range that is suitable for the precipitation of various metals. In the case of the elevated zinc and cobalt concentrations, as well as other potential contaminants, encompassing the entire spectrum within the desired pH range proves to be challenging.

c. Details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event

The measures to be undertaken above will be in addition to those steps already being undertaken on the plant which serve to improve the performance. These include:

- Additional treatment tank with increased treatment capacity – project approved internally and construction of infrastructure has commenced.
- Ongoing optimisation of the WTP – including multi-staged pH adjustment.
- Conduct regular reviews of pH calibration of critical probes monitoring the WTP.
- Routine desilting of the treated water lagoon.
- Pre-treatment of the WTP feed water (via chemical dosing) to improve DAF performance.
- Monthly meetings with relevant senior management regarding LDP002 management.

As stated in the most recent site water management plan, additional monitoring locations, maintenance, and management procedures along with calibration of equipment have been incorporated into the operation of the plant to ensure its reliable operation.

d. Details of communication with other government agencies and any other relevant matter

Centennial has been working closely with the EPA for several years as part of a Pollution Reduction Program (PRP) focused on discharges into the Wollangambe River. Clarence has committed to the cessation of discharge via LDP002 and is working with the EPA, the Lithgow City Council and DPHI to meet this obligation.

Clarence is dedicated to ensuring compliance in our wide range of environmental performance indicators and takes any non-compliances very seriously. As with all exceedances, non-compliances or incidents that have occurred at Clarence Colliery, a complete and detailed report has been supplied to the EPA and DPHI.