Resources Regulator
Department of Regional NSW

Compliance audit program

EL8377 Lorrenda Exploration Project
EL5801 E37 Exploration Project

CMOC Mining Pty Ltd

July 2023

Published by the Department of Regional NSW

Title: EL8377 Lorrenda Exploration Project, EL5801 E37 Exploration Project

Subtitle: CMOC Mining Pty Ltd

First published: whenever 2023

Department reference number: RDOC23/147522

Amendment schedule		
Date	Version	Amendment
July 2023	1.0	First published

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1. Introduction

1.1. Background

Exploration licence 8377 (Act 1992) (EL8377) was granted to CMOC Mining Pty Ltd (CMOC Mining) in June 2015. Exploration licence 5801 (Act 1992) (EL5801) was granted to North Mining Limited on 8 January 2001. EL5801 was transferred to CMOC Mining in January 2014. The exploration areas are about 23 kilometres west of Parkes in central NSW.

CMOC Mining operates the Northparkes copper mine to the east of the exploration areas. Exploration was undertaken to identify future resources for mining of the deposit.

As part of the compliance audit program, an audit of the exploration activities associated with the exploration projects within EL8377 and EL5801 was undertaken on 10 May 2023 by the Resources Regulator within the Department of Regional NSW (the Department).

1.2. Audit objectives

The objectives of the audit were to:

- undertake a compliance audit of the CMOC Mining exploration activities against the requirements of the *Mining Act 1992* and the conditions of the exploration licences and activity approvals issued pursuant to that Act.
- assess the operational performance of the exploration activities and the ability of the licence holder and/or its operator to implement management systems and controls to provide for sustainable management of the operations.

1.3. Audit scope

The scope of the audit included:

- the exploration activities associated with Lorrenda and E37 exploration projects including:
  - exploration activities within EL8377 and EL5801 including a selected sample of exploration drillholes
  - borehole sealing and rehabilitation activities for selected drilling activities undertaken since January 2020
- A review of documents and records pertaining to the exploration activities

The assessment of compliance for the period commencing 1 May 2021 and ending 9 May 2023.

1.4. Audit criteria

The audit criteria against which compliance was assessed included:

- *Mining Act 1992*, specifically, Sections 5, 30, 140, 163C to 163E, 163G, 378D
- Mining Regulation 2016, specifically clauses 59 to 68
- Conditions attached to EL8377 (granted 12 June 2015 and renewed 15 August 2018)
- Conditions attached to EL5801 (granted 8 January 2001 and renewed 23 April 2019)
- Exploration activities application dated 9 January 2020 for the Lorrenda aircore program consisting of 27 vertical aircore holes, and associated approval dated 21 January 2020 (MAAG0005546)

- Assessable prospecting operations application dated 20 January 2023 for the E37 project consisting of up to 8 diamond and 12 reverse circulation holes, and associated approval dated 31 January 2023 (APO0001349)
- *Exploration Code of Practice: Environmental Management* (Version 3, September 2017 and Version 4, June 2021)
- *Exploration Code of Practice: Rehabilitation* (Version 3, September 2017 and Version 4, June 2021)
- *Exploration Code of Practice: Community Consultation* (Version 1.1, May 2016 and Version 2.0, October 2022)
- *Exploration Code of Practice: Produced Water Management, Storage and Transfer* (Version 3, September 2017 and Version 4, June 2021)
- *Exploration Reporting: A guide for reporting on exploration and prospecting in New South Wales* (Version 3, October 2021 and Version 4, January 2022)
- *Exploration Guideline: Annual activity reporting for prospecting titles* (Version 3.0, December 2020 and Version 4, October 2022) published by Department of Regional NSW.

1.5. Publishing and disclosure of information

This audit report was published on the Regulator's website consistent with:

- Section 365 of the *Mining Act 1992*
- Resources Regulator's *Public comment policy*
- *Government Information (Public Access) Act 2009*.

2. Audit methods

The audit process involved the interview of site personnel, a review of documentation and samples of records provided by the licence holder and/or operator to determine the level of compliance of the operations and assess the status of the operational performance. The audit process and methodology are described in more detail in the sections below.

2.1. Opening meeting

An opening meeting was held onsite on 9 May 2023. The audit team was introduced, and the scope of their responsibilities was conveyed to the auditees. The objectives and scope of the audit were outlined. The methods to be used by the team to conduct the audit were explained, including the interview of personnel, review of documentation, examination of records and a site inspection to assess specific compliance requirements.

2.2. Site interviews and inspections

2.2.1. Data collection and verification

Where possible, documents and data provided during the audit process were reviewed electronically on the day. Several documents were unable to be reviewed on the day and were provided following the remote audit.

All information obtained during the audit process was verified by the audit team where possible. For example, statements made by site personnel were verified by viewing documentation and records, including site photographs, where possible. Where suitable verification could not be provided, this has been identified in the audit findings as not determined.

2.2.2. Site inspections

A site inspection was undertaken of the following sites:

- EL8377
  - Aircore hole GRA3695 – drilled 2020, site rehabilitated
  - Aircore hole GRA3691 – drilled 2020, site rehabilitated
  - Aircore hole GRA3554 – drilled 2020, site rehabilitated
  - General area of the Lorrenda aircore program – provided context for the rehabilitation of the area
- EL5801
  - Diamond hole E37D129 – drilling in progress, hole was at depth 411m
- Northparkes Mine
  - Exploration core and sample storage areas

2.3. Closing meeting

A closing meeting was held on site on 9 May 2023. The objectives of this meeting were to discuss any outstanding matters, present preliminary findings and outline the process for finalising the audit report.

2.4. Compliance assessment definitions

The reporting of results from the compliance audit was determined based on the definitions presented below in Table 1.

Table 1 Compliance assessment definitions

Assessment	Criteria
Compliance	Sufficient and appropriate evidence is available to demonstrate the particular requirement has been complied with.
Non-compliance	Clear evidence has been collected to demonstrate the particular requirement has not been complied with. There are three subcategories of non-compliance reflecting the severity and level of risk associated with the non-compliance: NC1 – the absence of planning or implementation of a required operational element which has the potential to result in a significant risk. NC2 – an isolated lapse or absence of control in the implementation of an operational element which is unlikely to result in a significant risk. NC3 – an administrative or reporting non-compliance which does not have a direct environmental or safety significance. Note: The identification of a non-compliance in this audit may or may not constitute a breach of, or offence under, the *Mining Act 1992*. Non-compliances identified in this audit report may be further investigated by the Regulator and regulatory actions may be undertaken.
Observation of concern	Where an auditee may be compliant at the time of the audit but there are issues that exist that could result in the potential for future non-compliance if not addressed. Observation of concern was also used where an issue may not have particular compliance requirements, but which was not conducive to good management or best practice.
Suggestion for improvement	Where changes in processes or activities inspected or evaluated at the time of the audit could deliver improvement in relation to risk minimisation, sustainable outcomes and management practices.
Not determined	The necessary evidence has not been collected to enable an assessment of compliance to be made within the scope of the audit. Reasons why the audit team could not collect the required information include: insufficient information on the file relating to the period covered by the audit or insufficient evidence collected to reach a conclusion the wording on the criteria (approval condition) meant that no evidence could be gathered, or it was too difficult to gather the evidence. A 'not determined' assessment was also made where the condition was outside the scope of the audit.
Not applicable	The circumstances of the authorisation or licence holder have changed and are no longer relevant (e.g. no longer mining, mining equipment and plant has been removed). An invoking element in the criteria was not activated within the scope of the audit.

2.5. Reporting

Following completion of the audit, the audit checklists were completed, and audit notes were reviewed to compile a list of outstanding matters to be noted in the audit report. This report was prepared to provide an overview of the operational performance of the site in relation to the

exploration activities and identify any non-compliances or observations of concern noted by the auditors during the documentation review and interviews.

The draft audit findings were forwarded to CMOC Mining for comment. Consideration was given to the representations made during the finalisation of the audit report as discussed in the audit findings.

3. Audit findings

3.1. Work program

Condition 1 of EL5801 and EL8377 required the licence holder to carry out the operations described in the approved work program. Work programs WP-EL5801-2019-2024 and WP-EL8377-2018-2023 were in force during the audit period.

Evidence was available to confirm that exploration activities were progressing. Annual reports for the 2021-2022 reporting period were reviewed for EL5801 and EL8377. Exploration completed included:

- Two diamond drill holes for a total of 1190m in EL5801
- Geochemical sampling and analysis from 16 rock sample in EL5801
- The continuation of a ground gravity survey in EL5801
- Interpretation of short-wave infrared data collected in EL8377 and EL5801
- Petrographic analysis of aircore samples from EL5801
- Trial lines of deep ground penetrating radar in EL5801
- Literature review, data management and exploration planning for both EL5801 and EL8377.

CMOC Mining used the annual reporting process to review and monitor the work programs on each tenement. Monthly tenement reports were provided by the tenement managers engaged by CMOC Mining which included information on the progress of the work programs.

Exploration data was noted to be maintained by the CMOC Mining geologists and the CMOC Mining GIS and database co-ordinator and submitted to Mining, Exploration and Geoscience (MEG) with the annual activity reports as required.

3.2. Access arrangements

Section 140 of the *Mining Act 1992* stated, 'the holder of a prospecting title must not carry out prospecting operations on any particular area of land except in accordance with an access arrangement or arrangements applying to that area of land'. The access arrangement was required to be agreed in writing between the holder of the prospecting title and each landholder of that area of land.

Evidence was provided to confirm that written land access agreements were in place for the exploration activities undertaken on EL8377 and EL5801. The land access agreements reviewed during the audit were generally noted to be prepared using a standard template. Some agreements noted additional conditions negotiated by the landholder (for example, no exploration operations during cropping season).

3.3. Native title and exempted areas

Condition 2 of EL5801 and EL8377 required the licence holder to obtain the prior written consent of the Minister before carrying out any activities on land on which native title had not been extinguished. Similarly, Section 30 of the *Mining Act 1992* required the consent of the Minister before a licence holder undertook any activities within an exempted area.

CMOC Mining exploration staff advised that exploration activities were generally being conducted in areas of freehold land. No specific land use mapping was completed by CMOC Mining in relation to exploration operations, but exploration staff advised that published mapping systems such as Six Maps were used to identify land tenure.

A review of mapping data showed that no recent holes had been drilled in any exempted areas within EL5801 or EL8377. No further approvals under section 30 of the *Mining Act 1992* were required. It was noted during a review of mapping data that holes had been drilled within exempted areas within EL5801 over 10 years ago. A review of department records confirmed that exempted area approvals were sought and granted at that time.

CMOC Mining exploration staff advised that most of the licence area was under freehold title where native title had generally been extinguished. Although not a compliance requirement, confirmation of extinguishment had not been sought from MEG. No further approvals under Condition 2 of the licence were required for EL8377.

In relation to EL5801, although outside of the audit scope period, it was noted that the right to negotiate process had been conducted in 2004, and approval of the Minister under condition 2 of the title was granted for specific areas of the exploration licence.

3.4. Community consultation

Condition 3 of EL5801 and EL8377 required the licence holder to carry out community consultation in relation to the planning and conduct of exploration activities. Community consultation was required to be carried out in accordance with the requirements of Exploration code of practice: Community consultation.

An assessment against the mandatory requirements of the code of practice was undertaken as documented in the following sections.

3.4.1. Risk assessment

Mandatory requirement 1 of the code of practice required the licence holder to conduct a risk assessment to identify and consider the range of opportunities and potential threats associated with community consultation and engagement.

It was noted that an assessment of opportunities and risks associated with community engagement activities was documented in section 8.3 of the CMOC Mining Management Plan for Stakeholder Communications (version 6). Although this plan was primarily focused on the mining operations for the Northparkes Mine, the scope defined in section 2 of the plan identified that the plan applied to all activities undertaken by Northparkes including exploration activities.

3.4.2. Community consultation strategy

Mandatory requirement 2 required the preparation of a community consultation strategy to manage the risks identified in the risk assessment. Mandatory requirement 3 set out the requirements for preparation of the community consultation strategy.

Community consultation for exploration operations was noted to be managed in conjunction with the community consultation for the Northparkes mining operations and a consolidated community consultation strategy was prepared and implemented.

A copy of the CMOC Mining Management Plan for Stakeholder Communications (version 6) was provided for review as part of the audit. It was noted that the plan addressed the mandatory requirements of the code of practice. For example,

- objectives for community consultation were defined in section 3
- identification of stakeholders was documented in sections 6.4 and 9.2
- mechanisms for consultation with each stakeholder type were documented in section 6.4
- processes for responding to community enquiries and complaints were documented in section 6.5.

The Exploration code of practice: Community consultation was updated following industry consultation with changes effective from 7 October 2022. CMOC Mining should review the consultation strategy to ensure it reflects the requirements of the amended code of practice. This was raised as suggestion improvement no. 1.

3.4.3. Implementation and reporting

Mandatory requirement 4 required the licence holder to implement, monitor and report annually on the community consultation strategy.

Evidence was available to confirm implementation of the community consultation strategy. CMOC Mining was maintaining records of landholder consultation which documented any issues raised and outcomes achieved. Community actions were reported monthly in internal CMOC Mining reports and key performance indicators were in place to ensure timely responses for any complaints.

Up until the change to the code of practice in October 2022, annual community consultation reports were prepared and submitted by CMOC Mining, generally in accordance with the reporting guidance in Appendix 2 of the code of practice.

3.5. Exploration activity approvals

Section 23A of the *Mining Act 1992* required the holder of an exploration licence to obtain an activity approval prior to carrying out assessable prospecting operations.

Evidence was available to confirm that exploration activity approvals were sought and granted for exploration activities. Exploration activity approvals granted included:

- Exploration activities application dated 9 January 2020 for the Lorrenda aircore program consisting of 27 vertical aircore holes, and associated approval dated 21 January 2020 (MAAG0005546)
- Assessable prospecting operations application dated 20 January 2023 for the E37 project consisting of up to 8 diamond and 12 reverse circulation holes, and associated approval dated 31 January 2023 (APO0001349)

Generally, evidence was provided to indicate that the exploration activities were carried out in accordance with the description provided in the applications and in accordance with the approvals given.

3.6. Environmental management

Condition 4 of EL5801 and EL8377 required the licence holder to prevent or minimise so far as is reasonably practicable, any harm to the environment arising from the activities carried out under the licence. Condition 2 of the exploration activity approval required the licence holder to carry out the activity in compliance with Part B of the Exploration code of practice: Environmental management.

Exploration activities on EL8377 were completed and rehabilitated, so an assessment against the requirements of the environmental management code of practice was not completed for that exploration licence area.

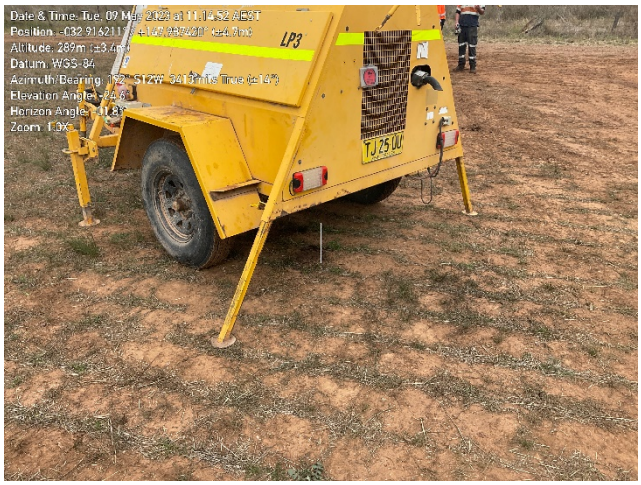
An assessment against the Exploration code of practice: Environmental management was completed for the exploration activities in progress on EL5801 as documented in the following sections. A drill rig was set up on hole E37D129 and diamond drilling was in progress. The hole was drilled to a depth of 411 metres at the time of the audit and was planned to continue to a depth of about 800 metres.

3.6.1. Use of chemicals, fuels and lubricants

Mandatory requirements 1.1 to 1.4 identified the requirements for the management of chemicals, fuels and lubricants used during exploration activities.

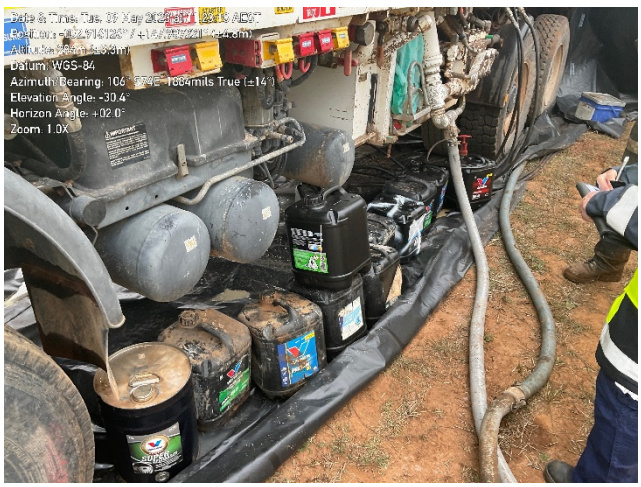
It was observed that the drilling company was using plastic beneath the rig to act as a rig nappy but there was no similar nappy under the lighting plant. A small stain from a possible minor diesel or oil leak was observed on the ground under the lighting plant (Figure 1). This was raised as observation of concern no. 1. It was recommended that the drilling company consider placing plastic nappies under the lighting plant and other plant and equipment on site to catch any hydrocarbon drips.

Figure 1 Lighting plant with no spill protection underneath



Minor quantities of oils, coolants, drilling chemicals and other substances were observed to be stored on the black plastic rig nappy under the drill rig (Figure 2). Given the plastic did not have adequate sides and may not provide appropriate secondary containment, there was potential for spills to escape the rig nappy. This was raised as observation of concern no. 2. It was recommended that the drilling company consider alternate storage methods of chemicals, fuels and lubricants (such as a spill pallet or bunded storage) such that adequate secondary containment can be provided in the event of a spill.

Figure 2 Oil and chemical storage on the rig nappy underneath the drill rig



It was noted the driller advised the trailer mounted diesel fuel tank was double skinned. This should provide adequate secondary containment for the diesel storage.

Safety data sheets were able to be provided for the chemicals, fuels and oils stored on site but there was a delay in being able to access the data sheets due to internet connectivity issues. In the event of a spill or other incident, a delay in accessing appropriate information could be critical. As suggestion for improvement no. 2, the drilling company should consider providing hard copies of

safety data sheets, or download them electronically to a device, in areas where internet connectivity was likely to be an issue.

A fully stocked spill kit was observed on site which included absorbent pads, booms and bags (Figure 3). The driller advised that staff had been trained in the use of the spill kit should a spill occur. No spills were reported from the drilling program.

Figure 3 Fully stocked spill kit on site

3.6.2. Water

Mandatory requirements 2.1 and 2.2 required the licence holder to implement all measures to prevent, so far as reasonably practicable, causing adverse impacts on water quality and quantity, including groundwater levels and pressure.

The CMOC Mining exploration staff and the driller advised that aboveground sumps were used to manage water associated with drilling (Figure 4). Sumps were pumped out using a vacuum truck when required during drilling operations. CMOC Mining staff advised that approval had been granted by Environment Protection Authority (EPA) for the disposal of the drilling fluids in the tailings dam at Northparkes Mine.

Figure 4 Above ground water management sump

Water for drilling operations was generally sourced from the mine water supply.

3.6.3. Noise and vibration

Mandatory requirement 3.1 required the licence holder to implement all practicable noise management measures to ensure that noise levels meet acceptable noise criteria for sensitive receivers.

It was noted that the drilling was being conducted in broadscale agricultural areas, approximately one kilometre or more from the nearest residence. Noise was assessed as part of the environmental risk assessment and the risk of adverse impacts was assessed as low. CMOC Mining considered that no specific controls were required to be implemented.

3.6.4. Air quality

Mandatory requirement 4.1 required the licence holder to implement all measures to prevent, so far as practicable, pollution caused by dust and other air pollutants.

The drilling in progress was diamond drilling. Water is used during the drilling process so the generation of dust is generally minimal. It was noted that the drilling was being conducted in broadscale agricultural areas, approximately one kilometre or more from the nearest residence. CMOC Mining considered that no specific controls were required as air quality issues were assessed as low risk.

3.6.5. Waste management

Mandatory requirement 5.1 required the licence holder to manage all waste in a manner which did not, as far as practicable, cause harm to the environment.

Waste streams generated from the exploration activities included:

- general domestic waste
- sample bags
- drill cuttings and fluids.

Generally, domestic waste was removed from the drill sites for disposal at the Northparkes mine site. Drilling wastes were removed from site using a vacuum truck for disposal in the tailings dam at the mine site. Records of waste management activities were noted to be recorded in the drillers plods and waste management invoicing.

3.6.6. Vegetation clearance and surface disturbance

Mandatory requirements 6.1 to 6.4 required the licence holder to:

- minimise the extent of any vegetation clearing and surface disturbance to as low as practicable
- implement all measures to prevent, so far as practicable:
  - adverse impacts to fauna caused by vegetation clearing or surface disturbance
  - causing any land degradation or pollution of land and water
  - harm to the environment when disturbing land in areas of potential or actual acid sulfate soils.

CMOC Mining exploration staff advised that drill hole planning was used to minimise the amount of surface disturbance and vegetation clearance required for the drilling programs. Generally, drilling was undertaken in cleared paddocks. Drill sites were marked out and all drilling equipment and light vehicles were required to stay within the marked boundaries. Wherever possible, existing farm tracks were used to access drill sites. No vegetation was required to be removed for the drilling program in progress at the time of the audit.

The terrain in which drilling was conducted was reasonably flat. Erosion was not a significant issue on the drilling completed and specific controls for erosion and sedimentation were not required.

3.6.7. Roads and tracks

Mandatory requirements 7.1 to 7.5 required the licence holder to:

- consult with relevant landholders prior to establishing any new roads or tracks

- plan, design, construct and use roads and tracks in a manner which minimises the area and duration of disturbance
- construct any crossing of rivers, permanent and intermittent water lands and wetlands to prevent impacts on fish habitats
- refrain from using any unsealed road or track during wet conditions to prevent damage to that road or track
- repair all damage to existing roads and tracks resulting from exploration activities.

CMOC Mining exploration staff advised that access to drill sites is agreed with the landholder during land access agreement negotiations and confirmed before the start of drilling. For the drilling programs in progress, no new roads or tracks were required. Access to drill sites was achieved using existing farm tracks. Drillers were required to stay on existing tracks and this was communicated to the drillers using a site specific induction.

It was noted that drill hole plans were prepared for each site which documented access requirements and the requirement to restrict access to sites during wet weather.

3.6.8. Weeds, pest animals and disease

Mandatory requirement 8.1 required the licence holder to implement all practicable measures to prevent the introduction and spread of weeds, pest animals and animal and plant diseases.

Vehicle hygiene procedures were the primary control to avoid the introduction of weeds into the site. CMOC Mining exploration staff advised that vehicles were washed down and inspected regularly to minimise the risk of weed spread between properties. Vehicle washdowns were recorded on the drillers plods for each drilling program. Drill rigs were inspected upon arrival on site to check for the presence of excess dirt or vegetative material.

3.6.9. Livestock protection

Mandatory requirement 9.1 required the licence holder to implement all measures to prevent, as far as practicable, causing adverse impacts to livestock.

CMOC Mining exploration staff advised that sheep were sometimes left in the paddock whilst drilling was in progress. No specific controls were identified as being required because aboveground sumps were in use and the sheep were not impacted by the drilling operations.

3.6.10. Cultural heritage

Mandatory requirement 10.1 required the licence holder to implement all measures to prevent, so far as practicable, harm to Aboriginal cultural heritage and non-indigenous cultural heritage.

Searches of the Aboriginal heritage information system (AHIMS) were conducted as part of the preparation of applications for exploration activity approvals. No items of cultural heritage were identified within the areas proposed for drilling. No specific controls were identified by CMOC Mining as being required.

3.6.11. Fire prevention

Mandatory requirement 11.1 required the licence holder to implement all measures to prevent, as far as practicable, the ignition and spread of fire.

CMOC Mining exploration staff advised that fire weather was monitored during the bushfire danger period. When ‘Cease harvest’ alerts were sent out by the Bureau of Meteorology or the RFS, CMOC Mining advised that drilling was also ceased until the conditions returned to levels that did not constitute a danger.

3.6.12. Risk assessment

Mandatory requirement 12.1 required the licence holder to monitor the risks associated with activities and, if the risk associated with an activity changes, implement revised environmental management controls.

CMOC Mining prepared an environmental risk assessment for the Northparkes mining operations which was noted to include exploration operations. The risk assessment was noted to include required environmental controls. For example, for the cause of 'Mine operations and surface drilling results in contaminated materials being placed or draining into surrounding waterways', CMOC Mining identified the following controls:

- Waste removal requirements to be included in drilling contracts.
- Immediate removal of bulk samples from drill sites.

For the cause 'Incorrect disposal, use, handling and/or transport of hydrocarbons leads to spill onsite resulting in contamination of land or water', CMOC Mining identified the following controls relevant to exploration activities:

- Stationary exploration equipment must be placed on roll out plastic bunds.
- Spill kits across site and a mobile spill response trailer.
- Hydrocarbons stored in double lined tanks or bunded for small container storage.

3.7. Security deposit

Condition 5 of EL5801 and EL8377 required the licence holder to provide a security deposit to secure funding for the fulfilment of obligations under the licence.

The security amount required for EL5801 was $362,000 which department records confirmed was held. The security deposit held reflects the extent of exploration activities undertaken across the title.

The security amount required for EL8377 was $29,000 which department records confirmed was held.

3.8. Rehabilitation

Condition 6 of EL5801 and EL8377 required the licence holder to carry out rehabilitation of all disturbance caused by activities carried out under the licence in accordance with the requirements of the Exploration code of practice: Rehabilitation.

An assessment against the mandatory requirements of the code of practice was undertaken for the exploration activities as documented in the following sections.

3.8.1. Risk assessment

Mandatory requirement 1 required the licence holder to conduct a risk assessment to evaluate the range of potential threats and opportunities associated with rehabilitating disturbed areas to a condition that could support the intended final land use.

It was noted that rehabilitation risks associated with exploration activities were included in the Environmental Aspects and Impacts Register prepared by CMOC Mining for the Northparkes Mine. For example, for the cause of 'inadequate rehabilitation results in flora and fauna injury or death due to uncapped drill holes', CMOC Mining identified the following controls:

- Use of ground disturbance and rehabilitation standard operating procedure.
- Include a requirement for capping of holes in the drill contract.

- Monthly rig inspections.
- Check the capping of holes using the drill program site layout checklist.
- Track rehabilitation status in the rehabilitation database and noted on the drilling cover sheets.

Examples of checklists and procedures used were sighted by the audit team to confirm implementation of the controls.

3.8.2. Rehabilitation objectives and completion criteria

Mandatory requirement 2 required the licence holder, not later than 14 days before the commencement of surface disturbing activities, to provide to the Secretary a copy of clear, specific, achievable and measurable rehabilitation objectives and completion criteria (ROCC). For higher risk prospecting operations, a rehabilitation management plan was required to be prepared and submitted with the rehabilitation objectives and completion criteria.

The exploration activity approval application lodged by CMOC Mining indicated that the total surface disturbance area was less than 5 hectares. The drilling programs did not fall within the definition of a higher risk activity under the code of practice and a rehabilitation management plan was not required to be developed.

Evidence was available in department records to confirm that ROCCs were submitted for each drilling program as part of the application for assessable prospecting operations. It was noted that the ROCCs submitted were generally based on the template provided in Appendix 2 of the code of practice.

3.8.3. Rehabilitation program

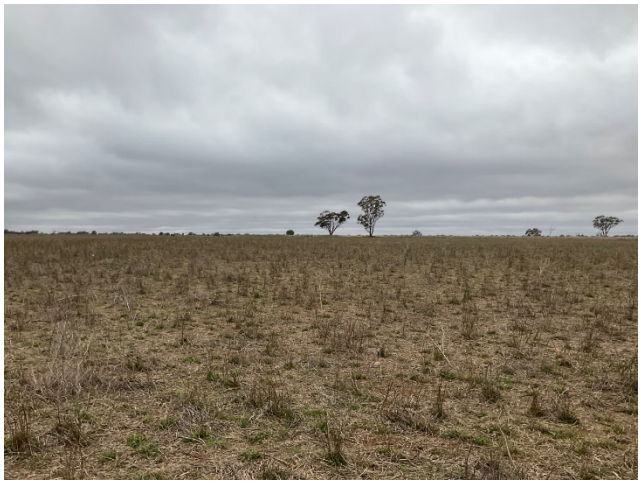
Mandatory requirement 3 required the licence holder to develop, implement and complete a rehabilitation program (which includes a monitoring program) to rehabilitate disturbed areas to a condition that could support the intended final land use. Mandatory requirement 4 required the licence holder to commence rehabilitation of a site as soon as reasonably practicable following the completion of activities on that site.

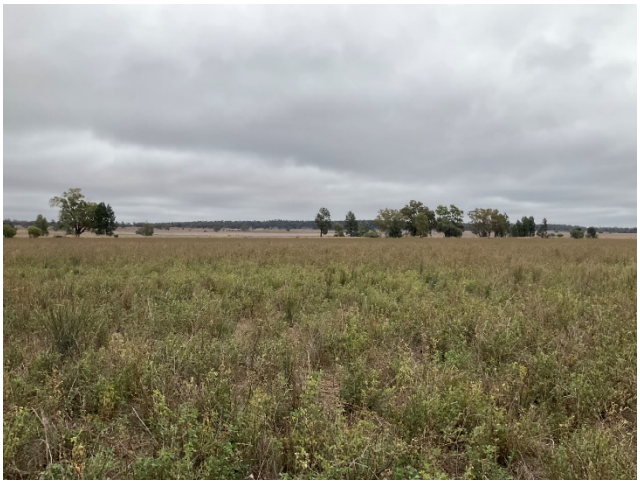
CMOC Mining exploration staff advised that typically all holes are grouted with rehabilitation commencing as soon as possible once the drill rig moves off site. Records reviewed showed that generally holes were rehabilitated within one month of drilling.

Rehabilitation monitoring was generally done using a photographic record with details recorded on the drill site layout checklist. Photographs before, during, and after drilling were noted to be maintained for each site.

Drilling was in progress on EL5801 but was completed on EL8377 for the Lorrenda air core program. Rehabilitation of air core drill sites was inspected during the audit (see Figure 5 and Figure 6). No issues of concern were identified. Since rehabilitation of the holes in the air core program on EL8377, the landowner has successfully ploughed and cropped the area.

Figure 5 Rehabilitation of the area of aircore hole GRA3695





3.9. Annual activity reporting

Section 163C of the Mining Act 1992, clause 59 of the Mining Regulation 2016 and condition 8 of EL5801 and EL8377 required the licence holder to submit an activity report annually within one calendar month following grant anniversary date. Annual activity reports were required to be prepared in accordance with the Exploration guideline: Annual activity reporting for prospecting titles.

During the audit scope period, CMOC Mining submitted annual activity reports comprising:

- annual geological report
- environmental rehabilitation and compliance report
- community consultation report (up to October 2022).

Generally, reports were found to be in accordance with the MEG and/or Resources Regulator templates and guidance material.

3.10. Core and sample storage

Clause 65 of the Mining Regulation 2016 required the holder of an authority to, so far as is reasonably practicable, collect, retain and preserve:

- all drill cores remaining after sampling
- characteristic samples of the rock or strata encountered in any drill holes.

All core and samples collected were required to be labelled, stored and managed in a manner that preserved the integrity of the core or samples.

CMOC Mining exploration staff advised that core and samples from the exploration drilling programs were stored at the core facility at the Northparkes Mine. The core trays for each hole were stacked on pallet racking in depth order, lids placed on the top trays, and strapped together (Figure 7).

Figure 7 Core trays stacked on pallet racking in the Northparkes Mine coreyard

RC and aircore drilling resulted in the collection of chip samples which were stored in plastic chip trays, labelled with hole number and depth. Samples were stored in depth order by hole on shelving in a building within the core yard.

3.11. Record keeping

Sections 163D and 163E of the *Mining Act 1992* related to the creation and maintenance of records required under the Act, the Regulations, or a condition of title. Records must be kept in a legible form for production to any inspector and must be maintained for a period of 4 years after the expiry or cancellation of the title. Specific requirements for the types of records to be maintained for exploration activities were detailed in the mandatory requirements of the exploration codes of practice as follows:

- mandatory requirement 6 of the rehabilitation code of practice
- mandatory requirement 13.1 of the environmental management code of practice
- mandatory requirement 5 of the community consultation code of practice.

Records reviewed during the audit demonstrated that CMOC Mining had generally maintained records as required by the licence conditions and the exploration codes of practice. It was noted that relevant documents and records were readily retrievable upon request.

Examples of records reviewed included:

- land access agreements
- drilling database
- tenement obligations reports
- technical work proposals
- surface drilling activity approval checklists
- drill hole plans
- drill site layout checklists
- weekly surface drill rig inspection checklists
- rehabilitation objectives and completion criteria
- pre, during and post drilling photos
- waste management records

- core storage records and photos
- environmental aspects and impacts register
- environmental management strategy
- community consultation register
- community consultation strategy
- annual activity reporting.

4. Compliance management

4.1. Identifying compliance obligations

Identifying compliance obligations is a critical step in the development of an effective compliance management system. Compliance obligations for an exploration project can include:

- regulatory requirements (for example, the *Mining Act 1992*)
- conditions imposed on the grant, renewal, or transfer of exploration licences
- exploration activity approvals
- exploration codes of practice
- specific commitments made by the organisation (for example, commitments made in the approved exploration activity application).

Once identified, compliance obligations should be reviewed periodically to identify any changes in those obligations (for example, changes in legislation).

The CMOC Mining exploration staff generally had a good understanding of the compliance requirements for exploration. Systems and processes for managing compliance requirements had been developed and implemented. However, it was noted that some of the systems in use were those used for the mining operations at Northparkes Mine and the CMOC Mining exploration staff did not have copies available. As suggestion for improvement no. 3, it is recommended that copies of all documents relevant to the exploration operations be available for use by the CMOC Mining exploration team, particularly those documents which are mandatory records under the codes of practice.

It was noted that records were generally being maintained to demonstrate compliance.

4.2. Subcontractor management

Contractors are often used to undertake specialist tasks, for example, exploration drilling. Whilst the responsibility for compliance or the implementation of environmental controls is often passed to the contractor, the licence holder will retain accountability for compliance with its licence conditions and other compliance obligations. It is important that the licence holder exercises management control of its contractors by specifying contract requirements, providing oversight of contracted works, and evaluating the performance of the contractor during the contracted works.

CMOC Mining were using contract drillers to complete the exploration drilling programs. One of the contract drilling operations was inspected during the audit. It was noted that the driller had a reasonable understanding of the environmental management controls required for drilling operations and had implemented most of the controls identified in the CMOC Mining environmental aspects and impacts register that were relevant to the drilling in progress.

The CMOC Mining exploration staff advised that contract drilling operations were supervised on a daily basis by CMOC Mining exploration personnel. For example, daily pre-start meetings were held with the drillers, and CMOC Mining staff undertake weekly audits and/or inspections. All drillers receive an induction into the drilling program and are provided with drill hole plans for each drill hole.

4.3. Inspections, monitoring and evaluation

An effective inspection, monitoring and evaluation process is required to:

- monitor the implementation of the risk controls

- evaluate the effectiveness of those controls based on an assessment of inspection and monitoring data
- implement an adaptive management approach if monitoring shows that controls may be ineffective.

CMOC Mining exploration staff established an inspection and monitoring process that aligned with the lifecycle of each drill hole. For example, planning for the drilling program was documented in a technical work proposal that formed the basis for the submission of the application for assessable prospecting operations. A surface drilling activity approval checklist was completed for each drill program, and then a detailed drill hole plan was developed for each drill hole in the program.

The environmental aspects and impacts register prepared by CMOC Mining was noted to include risks related to exploration activities and environmental management controls were in place. However, as suggestion for improvement no. 4, CMOC Mining should consider expanding its risk assessment process to include a post drilling review to assess the performance of the control measures and make any recommendations for future drilling programs, where those controls were shown to be not effective in addressing the risk.

5. Audit conclusions

From the evidence reviewed during the audit, it was concluded that CMOC Mining had achieved a high level of compliance with the requirements of the exploration licence, exploration activity approvals and the exploration codes of practice, for the elements reviewed during the audit. No non-compliances were identified during the audit.

Evidence was available to demonstrate that systems and processes had been developed to identify and manage compliance requirements. It was observed that records were being maintained as required to demonstrate compliance.

There was one area where observations of concern were identified in relation to drilling operations and recommendations made to improve the performance in that area. Several suggestions for improvement were identified to strengthen the compliance management system implemented by CMOC Mining.

Two observations of concern and 4 suggestions for improvement were identified as documented in Table 2 and Table 3.

Table 2 Summary of observations of concern

Observation of Concern No.	Description of Issue	Recommendation
1	It was observed that the drilling company was using plastic beneath the rig to act as a rig nappy but there was no similar nappy under the lighting plant. A small stain from a possible minor diesel or oil leak was observed on the ground under the lighting plant.	It was recommended that the drilling company consider placing plastic nappies under the lighting plant and other plant and equipment on site to catch any hydrocarbon drips.
2	Minor quantities of oils, coolants, drilling chemicals and other substances were observed to be stored on the black plastic rig nappy under the drill rig. Given the plastic did not have adequate sides and may not provide appropriate secondary containment, there was potential for spills to escape the rig nappy.	It was recommended that the drilling company consider alternate storage methods of chemicals, fuels and lubricants (such as a spill pallet or bunded storage) such that adequate secondary containment can be provided in the event of a spill.

Table 3 Summary of suggestions for improvement

Suggestion for Improvement No.	Description of Issue
1	The Exploration code of practice: Community consultation was updated following industry consultation with changes effective from 7 October 2022. CMOC Mining should review the consultation strategy to ensure it reflects the requirements of the amended code of practice.
2	Safety data sheets were able to be provided for the chemicals, fuels and oils stored on site but there was a delay in being able to access the data sheets due to internet connectivity issues. In the event of a spill or other incident, a delay in accessing appropriate information could be critical. The drilling company should consider providing hard copies of safety data sheets, or download them electronically to a device, in areas where internet connectivity was likely to be an issue.
3	Systems and processes for managing compliance requirements had been developed and implemented. However, it was noted that some of the systems in use were those

Suggestion for Improvement No.	Description of Issue
	used for the mining operations at Northparkes Mine and the CMOC Mining exploration staff did not have copies available. It is recommended that copies of all documents relevant to the exploration operations be available for use by the CMOC Mining exploration team, particularly those documents which are mandatory records under the codes of practice.
4	The environmental aspects and impacts register prepared by CMOC Mining was noted to include risks related to exploration activities and environmental management controls were in place. However, CMOC Mining should consider expanding its risk assessment process to include a post drilling review to assess the performance of the control measures and make any recommendations for future drilling programs, where those controls were shown to be not effective in addressing the risk.