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COMPLIANCE AUDIT PROGRAM

EL7223 EXPLORATION DRILLING PROGRAM

Shenhua Watermark Coal Pty Ltd



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1. Introduction

1.1. Background

Exploration licence 7223 (EL7223) was granted to Shenhua Watermark Coal Pty Ltd in October 2008. The exploration area is located approximately 25 kilometres south-east of Gunnedah, near the village of Breeza in northern NSW, and has an area of 95 square kilometres.

Exploration drilling within EL7223 began in June 2009, with a four-stage drilling program being completed between June 2009 and July 2012. The 943 holes drilled during the four-stage program had been sealed and rehabilitated, with this rehabilitation accepted by the NSW Resources Regulator as satisfactory in September 2018.

In October 2019, Shenhua submitted an application to conduct further exploration activities for assessable prospecting activities. The description of activities included:

- 16 HQ3 cored coal quality holes – average depth 90 metres
- 35 open (chip) holes for seam structure definition – average depth 90 metres
- two large diameter (300 millimetre) holes for detailed coal quality and utilisation studies with an average depth of 125 metres
- drill work areas would be approximately 30 metres by 30 metres for the coal quality and structural holes, and 50 metres by 50 metres for the large diameter holes.

The application was approved by the Regulator in November 2019 and drilling started on 20 January 2020.

As part of the compliance audit program, an audit of the exploration activities associated with the Shenhua Watermark project within EL7223 was undertaken on 12 March 2020.

At the time of the inspection in March 2020, 31 holes had been completed, 24 open (chip) holes and seven cored holes. Of those, 14 holes had been grouted. Neither of the large diameter holes had been drilled.

1.2. Audit objectives

The objectives of the audit were to:

- Undertake a compliance audit of the Shenhua Watermark Coal Pty Ltd exploration activities against the requirements of the Mining Act 1992 and the conditions of the exploration licence and activity approvals issued pursuant to that Act.
- Assess the operational performance of the exploration activities and the ability of the title holder 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 the Shenhua Watermark exploration project including:
 - exploration activities within EL7223, including a selected sample of exploration drillholes
 - borehole sealing and rehabilitation activities for selected drilling activities undertaken since March 2019.
- a review of documents and records pertaining to the exploration activities
- the assessment of compliance for the period commencing 20 March 2019 and ending 10 March 2020.

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 EL7223 (granted 22 October 2008 and last renewed on 13 July 2018)
- exploration activities application (ESF4) dated 21 October 2019 and associated approval dated 27 November 2019

- *Exploration Code of Practice: Environmental Management* (Version 2, April 2017) published by the (then) NSW Department of Planning and Environment
- *Exploration Code of Practice: Rehabilitation* (Version 2, April 2017) published by the (then) NSW Department of Planning and Environment
- *Exploration Code of Practice: Community Consultation* (Version 1.1, May 2016) published by the (then) NSW Department of Industry – Resources and Energy
- *Exploration Code of Practice: Produced Water Management, Storage and Transfer* (Version 2, April 2017) published by the (then) NSW Department of Planning and Environment
- *Exploration Reporting: A guide for reporting on exploration and prospecting in New South Wales* (Version 2, March 2016) published by the (then) NSW Department of Industry – Resources and Energy
- ESB28: Environmental Incident Reporting Requirements (October 2007) published by the (then) NSW Department of Primary Industries – Mineral Resources.

1.5. Publishing and disclosure of information

This audit report will be published on the NSW Resources Regulator’s website consistent with Section 365 of the *Mining Act 1992*.

This audit report may be publicly disclosed consistent with the *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 title holder and/or operator and a site inspection of the operations to determine the level of compliance of the operations and to assess the status of the operational performance. The audit process and methodology are described in more detail in sections below.

2.1. Opening meeting

The opening meeting was held on site at the Shenhua Watermark project office on 12 March 2020. 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 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 collected during the audit process were reviewed on site. Several documents were unable to be reviewed on site and were provided following the site visit.

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/or site inspections 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:

- Site E032 (BH22) – hole being drilled at time of inspection
- Site E030 (BH23) – cored hole, capped but not grouted
- Site E014 (OP55) – open chip hole, grouted
- Site E015 (OP56) – open chip hole, grouted
- Site E019 (OP65) – open chip hole, capped but not grouted
- Site E028 (BH29) – cored hole, capped but not grouted
- Site E06 (OP70) – open chip hole, grouted
- Site E025 (BH31) – cored hole, capped but not grouted
- Core shed – stored core and chip samples.

2.3. Closing meeting

The closing meeting was held on site at the Shenhua Watermark project office on 12 March 2020. 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 Audit assessment categories

ASSESSMENT	CRITERIA
Compliance	Sufficient and appropriate evidence is available to demonstrate that the particular requirement has been complied with.
Non-compliance	<p>Clear evidence has been collected to demonstrate that 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:</p> <p>NC1 – the absence of planning or implementation of a required operational element which has the potential to result in a significant risk.</p> <p>NC2 – an isolated lapse or absence of control in the implementation of an operational element which is unlikely to result in a significant risk.</p> <p>NC3 – an administrative or reporting non-compliance which does not have a direct environmental or safety significance.</p> <p>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.</p>
Observation of concern	<p>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.</p> <p>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.</p>

ASSESSMENT	CRITERIA
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	<p>The necessary evidence has not been collected to enable an assessment of compliance to be made within the scope of the audit.</p> <p>Reasons why the audit team could not collect the required information include:</p> <ul style="list-style-type: none"> ■ 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. <p>A ‘not determined’ assessment was also made where the condition was outside of the scope of the audit.</p>
Not applicable	<p>The circumstances of the authorisation or title holder have changed and are no longer relevant (i.e.. no longer mining, mining equipment and plant has been removed).</p> <p>An invoking element in the criteria was not activated within the scope of the audit.</p>

2.5. Reporting

Following completion of the site 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 site inspections and interviews.

The draft audit findings were forwarded to Shenhua 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 EL7223 requires the licence holder to carry out the operations described in the approved work program. Work program WP-EL7223-2018-2021 was approved by the (then) Division of Resources and Energy (DRE) on 13 July 2018 as part of the renewal of EL7223.

During discussions with Shenhua staff, it was reported that Shenhua undertook an internal review of the work program on a quarterly basis. A work program was lodged with the renewal application in 2016 and approved in 2018. The proposed work program for Year 1 was not completed in 2018. In 2019, Shenhua submitted a revised work program for Year 2 with the annual activity report for Year 1. This revised work program contained a justification for the delay in achieving the Year 1 program, with the program subsequently transferred to Year 2. However, Shenhua was not able to complete the work program in Year 2 and submitted an updated work program for Year 3 with the Year 2 annual activity report, which transferred the drilling program to Year 3 (ending 23 October 2020). The drilling program was in progress at the time of the audit and was planned to be completed before the end of Year 3 in October 2020, so the work program for Year 3 was on track to be completed.

Shenhua reported that a meeting had been held with DRE representatives which discussed the delays to the work program and updated DRE on exploration progress.

Exploration data is maintained by the Shenhua geologists and submitted with the annual activity reports as required.

3.2. Access agreements

Section 140 of the Mining Act 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.

Shenhua advised that it owned the land within the EL area and hence access agreements had not been required. However, Shenhua advised that it had been liaising with lessees of the properties.

3.3. Native title and exempt areas

Condition 3 of EL7223 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.

Shenhua identified two areas where native title may have existed - a trig station site and a reserve for a school in Watermark. These areas also fell within the definition of an exempted area. The company advised that no exploration activities have been conducted in those areas. This was verified using GIS mapping as drilling locations were not within the crown land reserves. The drilling program was undertaken on privately owned land and was not within any exempt areas, therefore further approvals under section 30 of the Mining Act were not required.

Shenhua advised that the native title right to negotiate process was undertaken during the development consent process and native title was now considered to be extinguished.

3.4. Community consultation

Condition 3 of EL7223 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 requires the title holder to conduct a risk assessment to identify and consider the range of opportunities and potential threats associated with community consultation and engagement.

Shenhua had undertaken a risk assessment for the community consultation aspects of the drilling program, based on the template provided in Table 2 of the code of practice. The assessed activity impact level was medium, which the auditor agreed with. The risk assessment was noted to be documented in the Community Consultation Strategy prepared in accordance with mandatory requirement 2.

3.4.2. Community consultation strategy

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

Shenhua had prepared a community consultation strategy for the Watermark Project exploration drilling program corresponding with the activity impact assessment documented under mandatory requirement 1.

The strategy was reviewed during the audit and was found to address the requirements of the code of practice. For example:

- the risk assessment was documented in section 4
- stakeholder identification was addressed in section 5
- engagement mechanisms were identified in section 6.1 and section 7
- the complaints management process was documented in section 7.2
- section 8 of the strategy set out the requirements for monitoring and revising the strategy based on an evaluation of the landholder engagement activities.

3.4.3. Implementation and reporting

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

Evidence was available to demonstrate that Shenhua has generally implemented the community consultation strategy. For example:

- minutes of community consultative committee meetings
- a copy of the newspaper advertisement on the Shenhua website regarding commencement of the exploration drilling project
- complaints register and complaints records
- stakeholder engagement activities register.

Although typically only a requirement for high impact activities (as identified in Section 1.9 of Appendix 1 of the code of practice), Shenhua had employed a Community Liaison Officer who was responsible for the implementation of the community consultation strategy and providing annual reports in accordance with the code of practice requirements.

Community consultation reports for the 2018 and 2019 reporting years were submitted as part of the annual activity reporting required by condition 8 of EL7223. Given the lack of exploration drilling activities in those years, both reports were submitted as shorter reports in accordance with the requirements of Section 2.2 of Appendix 2 of the code of practice.

3.5. Exploration activity approvals

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

Shenhua had undertaken several exploration drilling programs over the 12 years since being granted the title. Applications for activity approval have been made and granted for each drilling program. The audit focussed on the most recent exploration activity approval which was submitted in October 2019 and approved in November 2019.

Generally, evidence was available to confirm that activities are being carried out in accordance with the exploration activity approval and the codes of practice as documented in the following sections.

3.6. Environmental management

Condition 4 of EL7223 requires 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 requires the licence holder to carry out the activity in compliance with Part B of the *Exploration Code of Practice: Environmental Management*.

No evidence of environmental harm, beyond that which was approved in the exploration activity approvals, was observed at the sites visited during the site inspection. Mannion Drilling rig MD29 was set up on site E032 (BH22) at the time of the audit. The exploration drilling was observed to be generally undertaken in accordance with the *Exploration Code of Practice: Environmental Management* as documented in the following sections.

3.6.1. Use of chemicals, fuels and lubricants

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

Drilling fluids, oils, greases and other chemicals were observed to be stored in a bunded container within the Mannion Drilling site caravan (refer to Figure 1). Discussion with Mannion staff indicated that all drilling staff were trained in the correct use, handling and storage of chemicals, fuels and oils.

A safety data sheet register was observed to be maintained by Mannion Drilling and copies of relevant safety data sheets were available for a sample of fuels and chemicals observed on site. Generally, the safety data sheets were less than five years old and Mannion staff advised that new copies of safety data sheets are supplied by the supplier when issued.

Rig nappies were not being used under the rig or the compressor truck, however the rig was only on each site for a day or two due to the shallow depth of drilling. The Mannion drilling risk assessment did not identify the need for the use of rig nappies. No evidence of hydrocarbon contamination was observed on any of the sites inspected.

A fully stocked spill kit was observed on site at BH22 which was the hole being drilled. The kit included absorbent materials, spill control matting and spill socks. The spill kit was located outside of the drilling caravan adjacent to the drill rig and was easily accessible by staff on the drill site (refer to Figure 2).

Mannion Drilling advised that all Mannion staff are trained in using a spill kit as part of their induction training.

Figure 1 Chemicals and fuels stored on bunded pallet in drillers caravan



Figure 2 Fully stocked spill kit outside drillers caravan



3.6.2. Water

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

An aboveground sump (metal skip bin) was observed in place at BH22 to contain drilling fluids, although drilling was not in progress at the time of the inspection (refer to Figure 3). Sediment fencing was observed to be in the process of being erected on the downslope side of the drilling fluids bin (refer to Figure 4). Water for drilling was observed to be trucked into each site.

There was no evidence observed at any of the drill sites inspected that adverse impacts had been caused to water quality or quantity in the area.

A groundwater model was prepared as part of the environmental impact assessment, and from this, a water management plan was prepared. Given the shallow depth of drilling in the current program (generally less than 150 metres), minimal groundwater was expected to be encountered and no significant groundwater had been intersected in the holes drilled to date. It was noted that groundwater was considered in the environmental management plan prepared for the drilling project.

Figure 3 Aboveground metal sump for drilling muds/returned water at BH22



Figure 4 Sediment fencing erected downslope of drill rig and adjacent to aboveground sump at BH22



3.6.3. Noise and vibration

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

The drilling program was being undertaken in paddocks and ridge country approximately 3 kilometres from the nearest sensitive receptor. Shenhua established set drilling hours to manage potential noise impacts. This included Monday to Friday, 7am to 6pm and on Saturday from 8am to 1pm, with no drilling on Sunday. Discussion with Mannion Drilling staff confirmed they were aware of the restrictions to hours of work and were complying with those requirements. It was noted that a copy of the Shenhua EMP was pinned to the wall of the Mannion Drilling site caravan, along with the safety management documentation.

The Mannion Drilling supervisor reported that noise testing of the drill rig had been completed with a sound power level of 102 decibel (dB) obtained.

3.6.4. Air quality

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

Mannion drilling supervisor advised that drilling fluids were used for all cored holes, which minimised the generation of dust. For open holes, water injection was used to control dust. Drilling was not in progress at the time of the inspection of BH22 so the controls could not be verified, but the water tank and the return drilling fluids tank were observed to be in place on site.

No air quality issues were observed at any of the sites inspected during the audit site inspection. It was noted that recent rain in the area had dampened ground conditions.

3.6.5. Waste management

Mandatory requirement 5.1 requires the title holder to manage all waste in a manner which does not, as far as practicable, cause harm to the environment.

Waste from the drilling program was observed to be generally minimal. Mannion staff advised that domestic waste (i.e. lunch wrappings, drink containers) were collected and stored in waste bins for disposal off site. A domestic waste bin was observed in the drillers' site caravan. There was generally no evidence of littering at the sites inspected.

Drilling return water and muds from cored holes were contained within a steel tank which was emptied at the completion of each hole using a sucker truck. Waste receipts were maintained for each load taken

off site. It was reported by Shenhua that the drilling fluids were sent to either a Kooragang Island waste facility or were dispatched to a Queensland waste facility.

Drill cuttings from open holes were collected in steel skip bins for disposal off site at a licensed waste facility (refer to Figure 5). Waste receipts were also observed to be maintained as a record of amounts disposed.

Some minor grouting wastes/spills were observed at some of the drill sites, but rehabilitation had not yet been undertaken at these sites (refer to Figure 6). Any minor grouting residues would be tidied up during the rehabilitation phase.

Figure 5 Metal skip bins for drill cuttings ready to be relocated to next chip hole



Figure 6 Minor grout spill along access track at site E015 (OP56)



3.6.6. Vegetation clearance and surface disturbance

Mandatory requirements 6.1 to 6.4 requires the title 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
 - 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.

Generally, clearing of vegetation was not required for any of the drill sites inspected, nor was the construction of specific drill pads required. The drill rig and other vehicles were driven over the groundcover vegetation to each site with no access track construction required. The drill holes were planned to avoid trees and other vegetation, with most holes inspected being in cleared paddock areas (refer to Figure 7).

Observations made during the site inspection confirmed that no trees have been felled or branches removed for the current drilling program. Shenhua and Mannion Drilling staff confirmed that no trees were planned to be felled or branches removed for the remaining holes. Hole OP65 (E019) was moved about 5 metres to avoid the dripline of a large tree (refer to Figure 8).

Figure 7 Typical hole in a cleared paddock area (Site E06 - OP70)



Figure 8 Site E019 (OP65) - hole relocated about 5m to avoid the drip line of tree



Generally, the locations of drill holes inspected were a low risk for erosion and sedimentation and no erosion or sedimentation was observed at any of the sites inspected. It was observed that sediment fencing was being erected at the BH22 drilling site near the aboveground sump and rod truck.

3.6.7. Roads and tracks

Mandatory requirements 7.1 to 7.5 requires the title 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.

Shenhua owned the land on which drilling was being undertaken. However, Shenhua staff advised that they were liaising with the lessees about the exploration drilling activities.

Generally, tracks used to access drill sites during the audit site inspection were existing farm tracks. There was no evidence of new track construction with access to drill sites. The tracks used during the audit site inspection were generally observed to be well maintained and trafficable.

Both Mannion Drilling and Shenhua staff advised that the drilling sites were shut down in periods of wet weather and no trucks were moved during rain events. Rain had occurred in the area in the week before the site inspection and no evidence of damage to roads or tracks was observed during the audit site inspection.

3.6.8. Weeds, pest animals and disease

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

Mannion Drilling had a procedure to prevent the spread of weeds and plant diseases. This procedure involved the cleaning of machinery and vehicles prior to entering the Watermark project area. Implementation of the procedure was confirmed on site with records of cleaning of vehicles sighted, for example:

- Vehicle/Machinery Weed Hygiene Declaration for truck AL-92-BI dated 28 February 2020
- Vehicle/Machinery Weed Hygiene Declaration for truck CC-34-MS dated 27 February 2020.

While some minor weed infestations were observed on site in the surrounding paddocks, they were generally not associated with the drilling activities. Shenhua staff advised that weeds in proximity to the drill holes would be removed during the rehabilitation phase (even if the weeds were not related to the drilling activities).

3.6.9. Livestock protection

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

No livestock was observed in the paddocks where drilling had taken place. Mannion Drilling confirmed that there had been no livestock in any of the paddocks during drilling. Given the absence of livestock from the drilling areas, no specific controls were required.

3.6.10. Cultural heritage

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

Shenhua utilised the services of Extent Heritage Advisers to undertake an archaeological due diligence assessment for each of the proposed drill sites prior to the commencement of the drilling program.

During the preparation of the ESF4 application, the AHIMS search identified that there was one known archaeological site in the vicinity of BH29 (E028) (refer to Figure 9). The Mannion Drilling supervisor was able to identify the site and advised that drilling staff were instructed to avoid the taped off area. During the site inspection, it was observed that the identified archaeological site had been taped off with barrier tape (refer to Figure 10). There was no evidence of wheel tracks or disturbance to the taped off area which was located about 100 metres from the borehole site. Alternative access to the borehole site was put in place to avoid the known archaeological site.

Figure 9 View of archaeological site from Site E028 (BH29)



Figure 10 Barrier tape used to mark off the archaeological site



3.6.11. Fire prevention

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

Mannion Drilling supervisor advised that fire extinguishers and emergency response equipment was located on the drill rig or within the associated trucks, and all staff were trained in the use of this equipment. Shenhua staff advised that they had a procedure for checking the NSW Rural Fire Service's website daily for fire danger ratings and the presence of fires nearby.

3.6.12. Risk assessment

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

Shenhua conducted a broad-brush risk assessment for the exploration drilling activities in November 2019. The risk assessment was documented and was noted to include a range of personnel, including the drilling contractor and environmental staff.

An 'Action Tracker for the Exploration Broad Brush Risk Assessment' was developed following completion of the risk assessment to track and close out any required actions. This had been updated during the drilling program as tasks were completed.

Shenhua environmental staff used weekly site inspections to monitor the implementation and effectiveness of risk controls (for example, site inspection checklists dated 11 March 2020, 3 March 2020, 17 February 2020 and 3 February 2020).

Mannion Drilling conducted a daily pre-production meeting which discussed any changes to risks or controls (for example, Pre-Production Meeting Checklist Rig MD29 dated 12 March 2020). Mannion advised that Shenhua staff are generally included in this meeting, promoting a two-way flow of information.

It was observed that the Mannion Drilling supervisor had a copy of the Shenhua EMP on site and was conversant with the risk controls required.

3.7. Security deposit

Condition 5 of EL7223 requires the licence holder to provide a security deposit to secure funding for the fulfilment of obligations under the licence.

The security amount required was \$250,000. This amount was held by way of bank guarantee. A security review was undertaken following receipt of the ESF4 for exploration drilling in 2019. There was one

other current activity approval (EAMS-2018-1123) for EL7223. The currently held security of \$250,000 was considered by the Regulator to be adequate for both the 2019 drilling and EAMS-2018-1123.

An ESF2 application for rehabilitation signoff was submitted on 29 June 2017. Inspection of a selected sample of drill holes from each of the previous drilling programs was undertaken in August 2018 and the rehabilitation was signed off as satisfactory on 19 September 2018. This reduced the rehabilitation liability to that required for the two active exploration approvals.

Observations made during the site inspection confirmed that the security amount required and currently held was accurate.

3.8. Rehabilitation

Condition 6 of EL7223 requires the title 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*.

Rehabilitation of previous drill programs on EL7223 was accepted by the Regulator as satisfactory in September 2018.

An assessment against the mandatory requirements of the code of practice was undertaken for the 2019/2020 drilling program as documented in the following sections.

3.8.1. Risk assessment

Mandatory requirement 1 requires the title 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.

As documented in Section 3.6.12, Shenhua prepared a broad-brush risk assessment for the drilling program in November 2019, prior to the commencement of drilling in January 2020.

3.8.2. Rehabilitation objectives and completion criteria

Mandatory requirement 2 requires the title holder, no later than 14 days prior to the commencement of surface disturbing activities, to provide to the Secretary a copy of specific, measurable, achievable, realistic and time-bound rehabilitation objectives and completion criteria. 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 Shenhua indicated that the total surface disturbance area was less than 5 hectares. The drilling program 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.

The Shenhua environmental superintendent had prepared rehabilitation objectives and completion criteria based on the template in the Appendix 2 of the Exploration Code of Practice: Rehabilitation. These were reviewed by the auditor during the audit and found to be appropriate for the drilling program in progress.

However, although the rehabilitation objectives and completion criteria had been developed, they were not submitted to the Secretary 14 days prior to the commencement of ground disturbing activities. Rather, it had not been submitted. This was identified as **non-compliance no. 1**.

Failure to submit the rehabilitation objectives and completion criteria is a breach of Condition 6 of the title. An official caution dated 8 April 2020 was issued by the Regulator for the identified breach.

3.8.3. Rehabilitation program

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

Shenhua had developed a rehabilitation program which programmed the grouting and rehabilitation of the holes drilled. For the exploration activity approved in November 2019, the drilling program was in progress, so rehabilitation had not commenced. Of the 31 completed drill holes, 14 had been grouted, but no other rehabilitation activities had taken place. The grouting program was ongoing as drilling progressed. Shenhua had investigated contractors for the rehabilitation works but had not engaged a contractor at the time of the audit.

3.9. Annual activity reporting

Section 163C of the Mining Act, clause 59 of the Mining Regulation and condition 8 of EL7223 requires the licence holder to submit an activity report annually within one calendar month following grant anniversary date. Annual activity reports are required to be prepared in accordance with the *Exploration guideline: Annual activity reporting for prospecting titles*.

Discussions with Shenhua staff identified that there were no specific formal systems in place to track reporting dates, but the Exploration Project Manager was using Microsoft Outlook calendar reminders to track reporting due dates. A review of state government records showed that reports for the last three years had been submitted on time.

For the last two years, Shenhua had been submitting annual activity reports comprising:

- annual geological report
- revised work program
- environmental rehabilitation and compliance report
- community consultation report.

Reports for the 2018 and 2019 reporting years were reviewed during the audit:

- Shenhua Watermark Coal Pty Ltd, Annual Exploration Report Exploration Licence 7223 for the period ending 22 October 2018
- Shenhua Watermark Coal Pty Ltd, Annual Exploration Report Exploration Licence 7223 for the period ending 22 October 2019
- Prospecting Titles Work Program, Year 1 submission 2018
- Prospecting Titles Work Program, Year 2 submission 2019
- Environmental and Rehabilitation Compliance Report for Exploration Licence 7223 Shenhua Watermark Coal Pty Ltd, submission date 20 November 2018
- Environmental and Rehabilitation Compliance Report for Exploration Licence 7223 Shenhua Watermark Coal Pty Ltd, submission date 19 November 2019
- Shenhua Watermark Coal Pty Ltd, shorter Annual Community Consultation Report, October 2017 to October 2018
- Shenhua Watermark Coal Pty Ltd, shorter Annual Community Consultation Report, October 2018 to October 2019.

Generally, reports were found to be in accordance with state government requirements

3.10. Core and sample storage

Clause 65 of the Mining Regulation requires 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 sample.

Both core and cuttings were collected during the drilling program. The cores and cuttings were observed to be stored in modular plastic core and chip trays and were stored within a locked shed, protected from the weather (refer to Figure 11). Each core tray or chip tray was observed to be labelled with hole number, tray number, start and finish depths (refer to Figure 12 and Figure 13). For the core trays, any zones of loss of core were identified with wooden blocks containing relevant information (refer to Figure 14). Core or chip samples were observed to be present for each of the holes inspected during the audit.

Discussions with Shenhua staff identified that no core had been disposed of to date.

Figure 11 Core trays inside the locked core shed



Figure 12 Core tray labelling



Figure 13 Chip trays for open holes



Figure 14 Core tray labelling - loss of core zones



3.11. Record keeping

Sections 163D and 163E of the Mining Act relates 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 four 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 Shenhua has generally maintained records as required by the licence conditions and the exploration codes of practice. It was also noted that Mannion Drilling maintains electronic records of its risk assessments, site inspections and pre-production meetings.

4. Compliance management

4.1. Identifying compliance obligations

Shenhua did not have a formal compliance management system but had developed a series of spreadsheets for identifying and tracking compliance actions for the exploration drilling project. For example, Action Tracker Exploration Broad Brush Risk Assessment included the identification of both safety and environmental compliance requirements. Responsibility for completion of the action tracker spreadsheet was with the individual responsible for each area (for example, the environmental manager was responsible for the activity approval and rehabilitation requirements). Discussions with Shenhua staff showed that staff had a good understanding of the requirements under the Mining Act, the conditions of title, and the exploration activity approval.

4.2. Subcontractor management

Contractors are often used to undertake specialist tasks, for example, exploration drilling. While 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.

Shenhua used a contract driller, Mannion Drilling, to undertake the exploration drilling program. The contractor was managed under a Contractor Control Plan, which among other things, required the contractor's performance to be evaluated monthly prior to payment of invoice. Mannion Drilling prepared a safety management plan for the works, which was approved by Shenhua, but were working under the Shenhua environmental management plan. A copy of the Shenhua EMP was observed in the drillers' caravan at BH22 and discussions with the Mannion Drilling supervisor confirmed that he was aware of the environmental requirements for the exploration drilling project.

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.

Shenhua developed and implemented a weekly drill site inspection regime which monitored the implementation of environmental controls during the drilling process. Where issues were identified, these were discussed directly with the driller for action.

Mannion Drilling had also developed and implemented an inspection regime. For example, for each drill site, a field area inspection checklist was completed electronically (using an iPad) and a photo taken and attached to the inspection record.

4.4. Training and competency

Shenhua required competency documents for contractors to be provided as part of the contract. In addition, Shenhua had developed a comprehensive induction package for staff and contractors which covered:

- community relations
- chemical management
- exploration licence and approved work program
- environmental issues and controls
- roles and responsibilities.

4.5. Titleholder response to draft audit findings

Shenhua was provided with a copy of the draft audit report and invited to submit a response to the draft audit findings. In an email to the Regulator, Shenhua advised that it did not have any specific comments on the draft report. As a result, no changes were made to the draft report.

5. Audit conclusions

From the evidence reviewed during the audit, and observations made on site during the audit site inspections, it was concluded that Shenhua has achieved a high level of compliance with the requirements of the exploration licence, exploration activity approval and the exploration codes of practice.

Both the Shenhua staff and the contract driller had a good knowledge of the environmental issues and controls associated with the drilling activities. Evidence was generally available to confirm implementation of the controls.

One non-compliance ranked NC3 was noted by the auditor as summarised in Table 1.

Table 1 Summary of non-compliances

NON-COMPLIANCE NO.	DESCRIPTION OF ISSUE	RECOMMENDATION
1 NC3	<p>The Shenhua environmental superintendent had prepared rehabilitation objectives and completion criteria based on the template in the Appendix 2 of the Exploration Code of Practice: Rehabilitation. These were reviewed by the auditor during the audit and found to be appropriate for the drilling program in progress. However, although the rehabilitation objectives and completion criteria had been developed, they were not submitted to the Secretary at least 14 days prior to the commencement of ground disturbing activities. Rather these were not submitted. An official caution for this breach was issued to Shenhua on 8 April 2020.</p>	<p>Shenhua should ensure that a copy of the rehabilitation objectives and completion criteria is submitted to the Regulator as required.</p>