



# **Asbestos Management Plan**

**Hanson Construction Materials Pty Ltd**

**East Guyong Quarry, East Guyong NSW**

**October 2011**

**Our Ref SH0137:89873**

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# **Asbestos Management Plan**

## **Hanson Construction Materials Pty Ltd**

### **East Guyong Quarry, East Guyong NSW**

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## Statement of Limitations - General

This report has been prepared in accordance with the agreement between Hanson Construction Materials Pty Ltd and Noel Arnold & Associates Pty Ltd.

Within the limitations of the agreed upon scope of services, this assessment has been undertaken and performed in a professional manner, in accordance with generally accepted practices, using a degree of skill and care ordinarily exercised by members of its profession and consulting practice. No other warranty, expressed or implied, is made.

This report is solely for the use of Hanson Construction Materials Pty Ltd and any reliance of this report by third parties shall be at such party's sole risk and may not contain sufficient information for purposes of other parties or for other uses. This report shall only be presented in full and may not be used to support any other objective than those set out in the report, except where written approval with comments are provided by Noel Arnold & Associates Pty Ltd.

## Document Quality Management

Document Quality Management Details	
<b>Report Name:</b>	Naturally Occurring Asbestos Management Plan
<b>Site Details:</b>	East Guyong Quarry, East Guyong NSW
<b>Project Number:</b>	89832-Rev 2 89873-Rev1
<b>Client Name:</b>	Hanson Construction Materials Pty Ltd
<b>Client Number:</b>	SH0137

Revision	Date Prepared	Prepared by	Date Reviewed	Reviewed By	Summary of Revision
-	30/5/2011	SB	16/8/2011	BD	Draft Report
1	25/8/2011	SB	26/8/2011	BD	Revised Draft (changes reflecting Department of Planning & Infrastructure comments and also inclusion of findings from further investigation reports)
2	30/8/2011	SB	30/8/2011	BD	Further Revised Draft (changes reflecting further reports and comments)
3	14/9/2011		14/9/2011		Further Revised Draft
4	21/10/2011		21/10/2011		Final Draft

## 1. Introduction

### 1.1 Project Approval

- 1.1.1 On 6 January 2011, the (then) NSW Department of Planning approved Major Project Application 06\_0193 for the development of the East Guyong Quarry, East Guyong NSW (the **Project**), subject to conditions.
- 1.1.2 The conditions are set out in Schedules 1 to 5 of the Project Approval. Schedule 3, entitled "Environmental Performance Conditions", includes conditions specific to the management of the naturally-occurring asbestos (**NOA**) that has been identified at the Site.
- 1.1.3 This Asbestos Management Plan has been prepared in fulfilment of Item 4 of Schedule 3 of the Project Approval, which provides that the Project Proponent, Hanson Construction Materials Pty Ltd (**Hanson**), must prepare and implement an Asbestos Management Plan for the Project in consultation with the Department of Industry and Investment (**I&I NSW**) and to the satisfaction of the Director-General of the NSW Department of Planning and Infrastructure (**Director-General**).
- 1.1.4 In particular, Item 4 of Schedule 3 provides that the Asbestos Management Plan must:
- (a) be prepared by a suitably qualified consultancy with expertise in the area of asbestos risk management, and be submitted to the Director-General for approval prior to the commencement of any earthworks at the Site;
  - (b) include:
    - \* a description of the measures and controls that would be implemented to manage asbestos within the Project area;
    - \* an asbestos monitoring protocol for evaluating compliance with the asbestos impact assessment criterion, with the following timeframe for measurement of asbestos:
      - (i) daily testing during the construction of all site infrastructure (excepting the quarry pit);
      - (ii) weekly testing following construction of site infrastructure for a period of three months;
      - (iii) monthly testing for the following 12 months; and
      - (iv) to the satisfaction of the Director-General thereafter;
    - \* a protocol for the notification of monitoring results;
    - \* a protocol for the investigation, notification and mitigation of identified exceedances of the assessment criterion; and
    - \* incident protocols in the event of exposure to asbestos.
- 1.1.5 In addition, this Asbestos Management Plan addresses other asbestos-related conditions in the Project Approval, which provide, in summary:
- Item 1, Schedule 3:** The Proponent shall undertake further investigations to map the extent of the asbestos mineralisation within the Project area to the satisfaction of the Director-General.
- Item 2, Schedule 3:** The Proponent must install appropriate fencing and warning signage around all surface outcrops of asbestos minerals within the Project Area to the satisfaction of the Director-General.
- Item 3, Schedule 3:** The Proponent shall ensure that any asbestos fibres generated at the Site do not exceed the impact assessment criterion of 0.01 asbestos fibres/ml of air.

## 1.2 Asbestos Management Plan

- 1.2.1 The purpose of this Asbestos Management Plan is to ensure that all practicable steps are taken to eliminate the risk of exposure to asbestos for:
- (a) personnel, including visitors of the site; and
  - (b) the public, including residents of neighbouring properties.
- 1.2.2 To accomplish this, the Asbestos Management Plan specifies work practices and procedures to:
- (a) ensure appropriate implementation of risk control strategies;
  - (b) ensure that works do not disturb Byng Volcanics bedrock, particularly that underlying the proposed quarry area (the **Quarry Area**) and the proposed infrastructure area (the **IA**) which may or may not host NOA;
  - (c) avoid encountering and disturbing NOA otherwise located on the Site;
  - (d) ensure that the asbestos fibre levels generated at the Site do not exceed the Asbestos Impact Assessment Criterion of 0.01 fibres/ml;
  - (e) prevent or minimise the possibility of accidental disturbance of Byng Volcanics; and
  - (f) monitor and review the risk control strategies.
- 1.2.3 This Asbestos Management Plan must be made available to, and understood by, all participants involved in the construction, management and operation of the Project.
- 1.2.4 The appropriate personnel at the site should be aware of the presence of the NOA materials and the need to ensure they are not disturbed. They should also understand their role in achieving this.

## 1.3 Definitions

- 1.3.1 "Byng Volcanics" (**BV**) means the Ordovician aged bedrock which underlies a substantial part of the East Guyong District and which may or may not host NOA, and includes any weathered or regolith BV which has the potential to host NOA.
- 1.3.2 "Authorised Geologist" means a person with qualifications in geology who has been authorised by the Director-General as required by Section 1.5.
- 1.3.3 "Authorised Blasting Officer" means a person with qualifications in blasting practices who has been authorised by the Director-General as required by Section 1.6.
- 1.3.4 "Hanson Quarry Manager" means a person who has been authorised by Hanson as required by Section 1.7.
- 1.3.5 "Hanson Project Manager" means a person who has been authorised by Hanson as required by Section 1.8.
- 1.3.6 "Intrusive Works" means any works for Site infrastructure that have the potential to disturb soil or rock on the IA.

## 1.4 Composition of Asbestos Management Plan

- 1.4.1 This Asbestos Management Plan comprises the following chapters:

**Chapter 1:** Introduction.

**Chapter 2:** Description of the Site.

**Chapter 3:** Description of the known occurrence and distribution of NOA on the Site.

**Chapter 4:** Control Measures specific to the Quarry Area.

**Chapter 5:** Control Measures specific to the Infrastructure Area.

**Chapter 6:** Asbestos Fibre Air Monitoring Protocol.

**Chapter 7:** Asbestos Fibre Air Monitoring Notification Protocol.

**Chapter 8:** Asbestos Fibre Exceedance Protocol.

**Chapter 9:** Incident Protocol in the event of exposure to NOA.

**Chapter 10:** Key responsibilities of relevant parties.

**Chapter 11:** Further inquiries.

**Appendix A:** NOA awareness training.

**Appendix B:** NOA clean up or removal works.

## **1.5 Appointment of Authorised Geologist**

- 1.5.1 Before any Intrusive Works or quarrying works are carried out on the Project, and at all times thereafter until the conclusion of the Project, Hanson must ensure that there is one or more Authorised Geologists appointed in accordance with this provision.
- 1.5.2 Hanson may nominate to the Department a person with qualifications in geology for approval as an Authorised Geologist and provide the Department with information relating to the person's qualifications and experience. The Department may authorise any person so nominated to act as an Authorised Geologist for the purposes of this Asbestos Management Plan.

## **1.6 Appointment of Authorised Blasting Officer**

- 1.6.1 Before any preparation for quarrying work is carried out on the Project, and at all times thereafter until the conclusion of the Project, Hanson must ensure that there is one or more Authorised Blasting Officers appointed in accordance with this provision.
- 1.6.2 Hanson may nominate to the Department a person with qualifications in blasting practices for approval as an Authorised Blasting Officer and provide the Department with information relating to the person's qualifications and experience. The Department may authorise any person so nominated to act as an Authorised Blasting Officer for the purposes of this Asbestos Management Plan.

## **1.7 Appointment of Hanson Quarry Manager**

- 1.7.1 Before any preparation for quarrying work is carried out on the Project, and at all times thereafter until the conclusion of the Project, Hanson must ensure that there is an authorised Hanson Quarry Manager.
- 1.7.2 The Hanson Quarry Manager must, upon being appointed, read this Asbestos Management Plan and be made aware of his or her responsibilities under it.

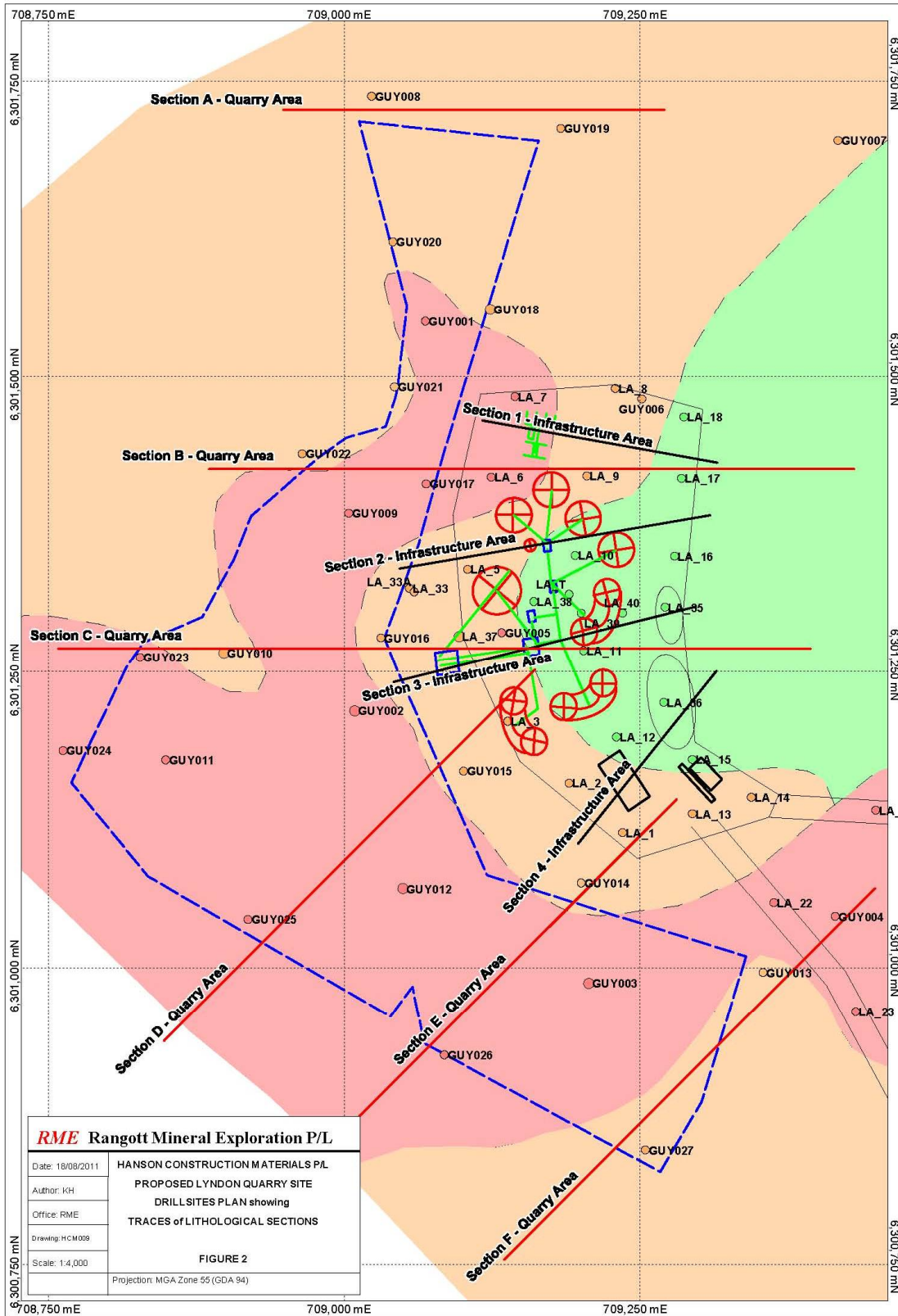
## **1.8 Appointment of Hanson Project Manager**

- 1.8.1 Before any Intrusive Works are carried out on the Project, and at all times thereafter until the conclusion of Intrusive Works, Hanson must ensure that there is an authorised Hanson Project Manager.
- 1.8.2 The Hanson Project Manager must, upon being appointed, read this Asbestos Management Plan and be made aware of his or her responsibilities under it.

## 2. Project Site

- 2.1 The Project comprises the establishment of a hard rock quarry, together with associated infrastructure and an access road, on Lots 110 and 111 of DP 852503 and Lots 3, 4 and 5 of DP 854608, Lewis Ponds Creek, Shire of Cabonne, Guyong (the **Site**).
- 2.2 The Site is located in a rural area approximately 32 kilometres west of Bathurst and 20 kilometres southeast of Orange. The Site is located adjacent to the Mitchell Highway.
- 2.3 The Quarry Area will be located on a ridge on the north-west part of the Site. The IA will be located in a sloping area in the northern section of the Site.
- 2.4 The Site has a total area of 147 hectares. The Quarry Area will occupy 15 hectares, the IA will occupy 7.3 hectares and the access road (the **Access Road**) will occupy 3.4 hectares.
- 2.5 The quarry will be operating to extract approximately 15 million tonnes of basalt over a 30 year period.
- 2.6 A Site layout of the Project is at **Figure 1**.

Figure 1 – Site Layout of the Project





### 3. NOA

3.1 Two main categories of bedrock have been identified on the Site:

- (a) BV. BV may host NOA and there is a risk that disturbance of BV may result in the release of NOA into the atmosphere.
- (b) Tertiary and Alkali basalt. There is a negligible risk of either form of basalt hosting NOA.

3.2 NOA has been identified at the following locations on the Site:

**East of the IA:** Exposed outcrops of NOA-bearing minerals have been identified in the north-east section of the Site and specifically around a small dam.<sup>1</sup>

**IA:** NOA has been identified in an east-west oriented zone in soil-covered BV in the IA at depths between 2.0 and 4.5 metres.<sup>2</sup>

**Quarry Area:** NOA has been identified in three percussion holes drilled along the eastern margin of the Quarry Area at depths of between 25 and 40 metres down hole (each significantly below the quarry pit floor).<sup>3</sup>

3.3 In addition, BV has been identified at the following locations on the Site:

**IA:** BV has been identified to underlie approximately 50% of the IA (predominantly the eastern half) at depths of between 1.0 and 4.0 metres beneath the soil cover.<sup>4</sup>

**Quarry Area:** BV has been identified in five percussion holes drilled along the eastern margin of the Quarry Area at depths between 23 and 37 metres down hole (each significantly below the quarry pit floor).<sup>5</sup>

**Access Road:** BV has been identified in the southern section of the Access Road at depths of between 1.5 and 31.5 metres beneath the soil cover.<sup>6</sup>

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<sup>1</sup> Rangott Mineral Exploration Pty Ltd, Report on the Occurrence and Distribution of Asbestos Minerals at the Planned Quarry Site, January 2010 (the **NOA Report**).

<sup>2</sup> Rangott Mineral Exploration Pty Ltd, Report on the Auger Drilling to Delineate the Distribution of Naturally Occurring Asbestos at the Planned Lyndon Quarry Site (East Guyong, NSW) dated 4<sup>th</sup> May 2011 (the **Augur Report**).

<sup>3</sup> Rangott Mineral Exploration Pty Ltd, Report on RC Percussion Drilling of Pit Shell Margins at the Planned Lyndon Quarry Site (East Guyong, NSW) and Associated Activities dated 19<sup>th</sup> August 2011 (the **Percussion Drilling Report**).

<sup>4</sup> Auger Report, p.7

<sup>5</sup> Percussion Drilling Report, p.4

<sup>6</sup> Auger Report, p.3

## 4. Control Measures for the Quarry Area

### 4.1 Key Control Measure

- 4.1.1 No disturbance of BV on, under or in the immediate vicinity of the Quarry Area, other than by way of controlled testing for the purpose of identifying the occurrence and distribution of BV, is to occur.
- 4.1.2 This key control measure is to be implemented by following the steps below.

### 4.2 Qualified Personnel

- 4.2.1 All personnel involved with drilling and blasting on, under or otherwise in respect of the Quarry Area must be competent to conduct such work under relevant legislation or regulations, including the *Explosive Regulation 2005* and *Occupational Health and Safety Regulation 2001*.
- 4.2.2 All personnel involved with drilling and blasting on, under or otherwise in respect of the Quarry Area must complete asbestos awareness training as outlined in Appendix A.
- 4.2.3 All personnel involved with drilling and blasting on, under or otherwise in respect of the Quarry Area must read and understand this Asbestos Management Plan and the Quarry Pit Development Plan<sup>7</sup> prepared in accordance with Section 5.5.2 of the *Environmental Assessment Report, Hard Rock Quarry, East Guyong NSW* dated 18 September 2009 (**EAR**).
- 4.2.4 Extraction work will progress in accordance with the Quarry Pit Development Plan and under the direction and control of an authorised Hanson Development Manager.
- 4.2.5 The Hanson Quarry Manager will be responsible for determining the size of each immediate area of extraction in accordance with Section 5.5.2 of the EAR and will operate under the direction of the authorised Hanson Development Manager.

### 4.3 Investigative Drilling

- 4.3.1 Prior to commencing a proposed area of immediate extraction (and, in particular, prior to the drilling of holes for blasting), the Hanson Quarry Manager must ensure that the immediate area of extraction is marked out on the quarry bench floor.
- 4.3.2 Prior to the commencement of production drilling, the marked out area must have exploratory holes drilled to the depth of at least six metres below the base of the proposed working face height (being the proposed level of the floor of the quarry or "bench" following extraction of that working face). The number of holes must be

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<sup>7</sup> The QPDP provides information on how the quarry extraction staging is to progress over time and includes information such as:

- Property and extractive boundaries;
- Location of existing plant, haul roads;
- Other features (powerlines, waterways, right of ways, easements, heritage and biological restrictions, geological hazards);
- Stage extraction areas (with geographical coordinates);
- Volumes of primary and secondary quality material and overburden material to be extracted;
- Location of overburden dumps;
- Haul road development, gradients, lengths;
- Dams/tailings/water management/settlement;
- Terminal face development;
- Staged rehabilitation works

representative of the perimeter of the immediate extraction area and must include at least one hole within the centre of the immediate extraction area.

#### 4.4 Inspection of Drill Hole Cuttings

4.4.1 The drill cuttings from each exploratory drill hole must be inspected by the Authorised Geologist. Following that inspection, the Authorised Geologist must provide an opinion recorded in a written report that the proposed extraction work does not risk disturbing BV, having regard to:

- (a) the geology of the rocks comprising the cuttings;
- (b) the distances between the exploratory holes and their placement; and
- (c) the depth of the exploratory holes.

4.4.2 If the Authorised Geologist determines that there is no risk of the proposed extraction work disturbing BV then the Authorised Geologist must provide the report described in Section 4.4.1 to the Authorised Blasting Officer.

#### 4.5 Confirmation of Blasting Safety

4.5.1 Following inspection of the Authorised Geologist's report and the Site conditions, the Authorised Blasting Officer must provide an opinion recorded in a written report that the proposed blasting work will **not** disturb BV, having regard to:

- (a) the method of extraction proposed (and, in particular, the type and extent of blasting proposed to be carried out); and
- (b) the safety methods employed (and, in particular, stemming of blast holes to proposed blast height, tamping of the stemming, measurement and recording of the remaining hole depth and specification of blast design criteria).

4.5.2 If the Authorised Blasting Officer determines that blasting work will not disturb BV then the Authorised Blasting Officer must provide the report described in Section 4.5.1 to the Hanson Quarry Manager and the Hanson Quarry Manager may direct the blasting to proceed. The blasting may not proceed unless the Authorised Blasting Officer makes such a determination.

#### 4.6 Discovery of BV

4.6.1 In the event that BV is identified by the Authorised Geologist in any of the exploratory drill hole cuttings, the extraction in that immediate area must not proceed any further, and the Director-General must be immediately notified.

4.6.2 In the event that, following blasting or during extraction, BV is discovered in a proposed area of extraction, the area must be cordoned off to prevent unauthorised access.

4.6.3 The Authorised Geologist must conduct further investigation to identify the extent of the BV. The Authorised Geologist must submit samples of the BV to a NATA-approved external laboratory for analysis by polarised light microscopy (**PLM**) to determine whether it contains NOA and take any other steps that the Authorised Geologist considers appropriate.

4.6.4 Based on the findings of the investigation, the Quarry Pit Development Plan must be modified to avoid excavating BV and to cap and isolate any BV that has been uncovered. The Quarry Pit Development Plan, however, must not be modified so as to alter the boundaries of the Quarry Area as provided in Figure 1 or the maximum depth of extraction as provided in the EAR.

4.6.5 The Hanson Quarry Manager must ensure that proposed immediate areas of extraction are in accordance with the revised Quarry Pit Development Plan.

4.6.6 Any NOA spoil must be removed and disposed of, where required, by a licensed AS-1 Asbestos Contractor nominated by Hanson in accordance with Appendix B.

#### 4.7 Non-Compliance

4.7.1 The Hanson Quarry Manager and the Director-General shall be advised immediately of any incidents of non-compliance that have occurred with the Asbestos Management Plan.

#### 4.8 Summary of Quarry Area Control Measures

4.8.1 Table 1 presents a summary of the control measures to be implemented in respect of the Quarry Area.

Table 1: Control Measures – Quarry Area		
Step	Action	Key Actions and Description
1	Approvals	<ul style="list-style-type: none"> <li>Procure any necessary consents or approvals, including those required by NSW WorkCover.</li> </ul>
2	Appointment of Personnel	<ul style="list-style-type: none"> <li>Identify and engage a suitably qualified and experienced hard rock geologist (the Authorised Geologist).</li> <li>Identify and engage a suitably qualified and experienced blasting officer (the Authorised Blasting Officer).</li> </ul>
3	Site Establishment	<ul style="list-style-type: none"> <li>All Site staff, contractors and sub-contractors to provide relevant documentation, insurances and Safe Work Method Statements to the authorised Hanson Quarry Manager and/or Principal Contractor.</li> <li>All Site staff, contractors and sub-contractors to attend mandatory asbestos awareness training as outlined in Appendix A.</li> <li>All Site staff, contractors and sub-contractors to read the Asbestos Management Plan and the Quarry Pit Development Plan.</li> </ul>
4	Investigative Drilling	<ul style="list-style-type: none"> <li>Prior to commencing a proposed area of immediate extraction, the Hanson Quarry Manager to ensure that the immediate area of proposed extraction is marked out on the quarry bench floor.</li> <li>Drill exploratory holes to the depth of at least six metres below the base of the proposed working face height on the marked-out area.</li> </ul>
5	Inspection of Drill Hole Cuttings	<ul style="list-style-type: none"> <li>Authorised Geologist to inspect exploratory drill hole cuttings to determine geology of rock.</li> <li>If geology is basalt then Authorised Geologist may prepare report recommending to Authorised Blasting Officer that extraction can proceed without disturbing BV.</li> <li>If BV is discovered in any drill hole cutting, extraction not to proceed.</li> </ul>
6	Confirmation of Blasting Safety	<ul style="list-style-type: none"> <li>Authorised Blasting Officer to inspect Authorised Geologist's report and Site conditions to determine whether safe to commence blasting.</li> <li>If blasting will not disturb BV then blasting may proceed.</li> <li>If there is a risk that blasting will disturb BV then blasting may not proceed.</li> </ul>

Table 1: Control Measures – Quarry Area		
Step	Action	Key Actions and Description
7	Discovery of BV	<ul style="list-style-type: none"> <li>• Cordon off proposed area of immediate extraction.</li> <li>• Authorised Geologist to conduct further investigation to identify the extent of the BV.</li> <li>• Based on findings of the investigation, modify Quarry Pit Development Plan to avoid disturbing BV (but no alteration of boundaries of Quarry Area or maximum depth of extraction permitted).</li> <li>• Ensure proposed immediate areas of extraction in accordance with the revised Quarry Pit Development Plan.</li> <li>• If NOA spoil exposed, engage licensed AS-1 Asbestos Contractor to handle and transport to approved waste facility in accordance with Appendix A.</li> </ul>
8	Non-compliance	<ul style="list-style-type: none"> <li>• Advise Hanson Quarry Manager and Director-General of any incidents of non-compliance with the Asbestos Management Plan.</li> </ul>

## **5. Control Measures for the IA**

### **5.1 Key Control Measure**

- 5.1.1 No disturbance of BV on, under or in the immediate vicinity of the IA, other than by way of controlled testing for the purpose of identifying the occurrence and distribution of BV, is to occur.
- 5.1.2 This key control measure is to be implemented by following the steps below.

### **5.2 Permit to Work**

- 5.2.1 Any contractor, Hanson employee or other authorised person who may potentially disturb the soil surface must be given prior notice and acknowledge the potential presence of NOA within the BV at depth below the ground surface. Hanson must take all steps to ensure that any such person is made aware of the potential presence of NOA within the BV at depth below the ground surface.
- 5.2.2 Any contractor, Hanson employee or other authorised person who may potentially disturb the soil surface must complete asbestos awareness training as outlined in Appendix A.
- 5.2.3 Any contractor, Hanson employee or other authorised person who may potentially disturb the soil surface must complete a permit to work or similar form that ensures that any work will not disturb the sub-surface BV.
- 5.2.4 A permit to work must include detailed information on the location of perimeter of excavation work and maximum depth of excavation to avoid contact with BV at depth. All information including approved drawings, plans and cross-sections must have the design referenced to Geocentric Datum of Australia 1994 (**GDA94**) and the Australian Height Datum (**AHD**).
- 5.2.5 Before being issued with a permit to work, individuals must read and understand this Asbestos Management Plan as well as copies of the approved design drawings, plans and cross-sections relevant to the excavation work being carried out.
- 5.2.6 At no stage may excavation be conducted at depths greater than those stipulated on the approved design drawings, plans and cross-sections.

### **5.3 Capping of IA**

- 5.3.1 Prior to the commencement of any Intrusive Works, the eastern section of the IA must be capped with clean soil from the western section of the IA in accordance with Figures 3g to 3j of the Percussion Drilling Report.
- 5.3.2 The capping works must ensure that there is a minimum two metre cap maintained between the top of the BV as shown in the Percussion Drilling Report and the maximum depth of all proposed Intrusive Works.

### **5.4 Investigative Drilling**

- 5.4.1 Prior to carrying out any Intrusive Works, drawings, plans and cross-sections recording:
- (a) the proposed Intrusive Works;
  - (b) the location of any identified BV in the vicinity of the proposed Intrusive Works; and
  - (c) the position of the exploratory holes to be drilled as required by Section 5.4.2;
- must be prepared by Hanson and approved by the Authorised Geologist.
- 5.4.2 Prior to commencing any Intrusive Works, any contractor, Hanson employee or other authorised person must ensure that the immediate area of excavation is marked out on the surface of the ground in accordance with the information shown on approved drawings, plans and cross-sections.

5.4.3 Prior to commencement of Intrusive Works, the marked out area must first have exploratory holes drilled to three metres below the design depth as shown in the approved drawings, plans and cross-sections. The holes must be representative of the perimeter of the immediate area of the Intrusive Works and must include at least one hole within the centre of the immediate area of the Intrusive Works.

## 5.5 Inspection of Drill Hole Cuttings

5.5.1 The drill cuttings from each exploratory drill hole must be inspected by the Authorised Geologist. Following that inspection, the Authorised Geologist must provide an opinion that the proposed Intrusive Works do not risk disturbing BV having regard to:

- (a) the geology of the rocks comprising the cuttings;
- (b) the distance between the exploratory holes and their placement;
- (c) the depth of the exploratory holes; and
- (d) the method of Intrusive Works proposed.

5.5.2 If the Authorised Geologist determines that there is no risk of the proposed Intrusive Works disturbing BV then the Hanson Project Manager may direct the Intrusive Works in the immediate area to proceed. The Intrusive Works may **not** proceed unless the Authorised Geologist makes such a determination.

## 5.6 Discovery of BV

5.6.1 In the event that BV is identified by the Authorised Geologist in any of the drill hole cuttings, the Intrusive Works in that immediate area must not proceed any further, and the Hanson Project Manager must be immediately notified.

5.6.2 In the event that BV is discovered during excavation, work must cease and the area must be cordoned off to prevent unauthorised access.

5.6.3 The Authorised Geologist must conduct further investigation to identify the extent of the BV. The Authorised Geologist must submit samples of the BV to a NATA-approved external laboratory for analysis by polarised light microscopy (**PLM**) to determine whether it contains NOA and take any other steps that the Authorised Geologist considers appropriate.

5.6.4 Any NOA spoil must be removed and disposed of, where required, by a licensed AS-1 Asbestos Contractor nominated by Hanson in accordance with Appendix B.

## 5.7 Response Measures

5.7.1 In the event that BV is discovered within two metres of the designed lowest depth of Intrusive Works in the immediate area of Intrusive Works, then the design of the approved drawings, plans and cross-sections must be amended to comply with the minimum capping of two metres. The amended design must be submitted to and approved by the Authorised Geologist and the Director-General before any further work is carried out.

## 5.8 Non-Compliance

5.8.1 The Hanson Project Manager and the Director-General shall be advised immediately of any incidents of non-compliance that have occurred with the Asbestos Management Plan.

## 5.9 Dust Suppression

5.9.1 Dust suppression techniques are to be utilised throughout all Intrusive Works, irrespective of whether BV is suspected to have been encountered or not.

## 5.10 Demobilisation

5.10.1 Following completion of the Intrusive Works, all plant and equipment shall be cleaned on Site to guard against asbestos contamination, whether or not BV has been encountered.



## 5.11 Record Keeping

5.11.1 Appropriate and detailed records of the location, depth and nature of the Intrusive Works are to be maintained.

## 5.12 Site Monitoring and Management

5.12.1 Regular inspections (no less frequently than biannually) of the capping layer throughout the life of the Project are to be undertaken to determine whether the capping layer is still in a sound condition.

5.12.1 Appropriate and detailed records of the location, depth and nature of the capping layer, with reference to the survey plan showing the exact location of the capping layer, are to be maintained and made available to the Director-General for the purposes of each Annual Review required by Item 3 of Schedule 5 of the Conditions of Approval.

## 5.13 Summary of IA Control Measures

5.13.1 Table 2 presents a summary of the control measures to be implemented in respect of the IA.

Table 2: Control Measures – IA		
Step	Action	Key Actions and Description
1	Approvals	<ul style="list-style-type: none"> <li>Procure any necessary consents or approvals, including those required by NSW WorkCover.</li> </ul>
2	Appointment of Personnel	<ul style="list-style-type: none"> <li>Identify and engage Authorised Geologist.</li> </ul>
3	Site Establishment	<ul style="list-style-type: none"> <li>All Site staff, contractors and sub-contractors to provide relevant documentation, insurances and Safe Work Method Statements to the authorised Hanson Project Manager and/or Principal Contractor as required.</li> <li>All Site staff, contractors and sub-contractors to attend mandatory asbestos awareness training as outlined in Appendix A.</li> <li>All Site staff, contractors and sub-contractors to read the Asbestos Management Plan.</li> <li>All Site staff, contractors and sub-contractors who may potentially disturb soil surface to complete permit to work or similar form that ensures that any work will not disturb the sub-surface BV.</li> </ul>
4	Preliminary Works	<ul style="list-style-type: none"> <li>Capping over the existing soil cover in the eastern section of the IA with clean soil from the western section of the IA to maintain a cap of two metres depth between BV and all Intrusive Works.</li> </ul>
5	Investigative Drilling	<ul style="list-style-type: none"> <li>Prior to commencing a proposed area of immediate Intrusive Works, the Hanson Project Manager to ensure that the immediate area of Intrusive Works is marked out on the ground of the IA.</li> <li>Prior to commencement of Intrusive Works, the marked out area to have exploratory holes drilled to three metres below the design depth as shown in the approved drawings, plans and cross-sections.</li> </ul>
6	Inspection of Drill Hole Cuttings	<ul style="list-style-type: none"> <li>Authorised Geologist to inspect each exploratory drill hole cutting to determine the geology of rock.</li> <li>If BV discovered in any of the drill hole cuttings, Intrusive Works in that immediate area must not proceed.</li> </ul>



Table 2: Control Measures – IA		
Step	Action	Key Actions and Description
7	Discovery of BV	<ul style="list-style-type: none"> <li>• Cordon off proposed area of immediate Intrusive Works to prevent unauthorised access.</li> <li>• Authorised Geologist to conduct further investigation to identify the extent of the BV.</li> <li>• Based on findings of the investigation, amend design of approved drawings, plans and cross-sections to comply with minimum two metre cap.</li> <li>• Licensed AS-1 Asbestos Contractor to remove and dispose of NOA spoil, where required, in accordance with Appendix B.</li> </ul>
8	Non-compliance	<ul style="list-style-type: none"> <li>• Advise Hanson Project Manager and Director-General of any incidents of non-compliance that have occurred with the Asbestos Management Plan.</li> </ul>
9	Intrusive Works	<ul style="list-style-type: none"> <li>• Use dust suppression techniques throughout all Intrusive Works irrespective of whether BV is suspected to have been encountered or not.</li> </ul>
10	Demobilise	<ul style="list-style-type: none"> <li>• Clean plant and equipment on Site following completion of Intrusive Works in the IA.</li> </ul>
11	Record Keeping	<ul style="list-style-type: none"> <li>• Maintain appropriate and detailed records of the location, depth and nature of the Intrusive Works.</li> </ul>
12	Site Monitoring and Management	<ul style="list-style-type: none"> <li>• Maintain regular inspections (at least biannually) of capping layer throughout the life of the Project to check condition.</li> <li>• Maintain appropriate and detailed records of the location, depth and nature of capping layer.</li> </ul>

## 6. Asbestos Fibre Air Monitoring Protocol

### 6.1 Introduction

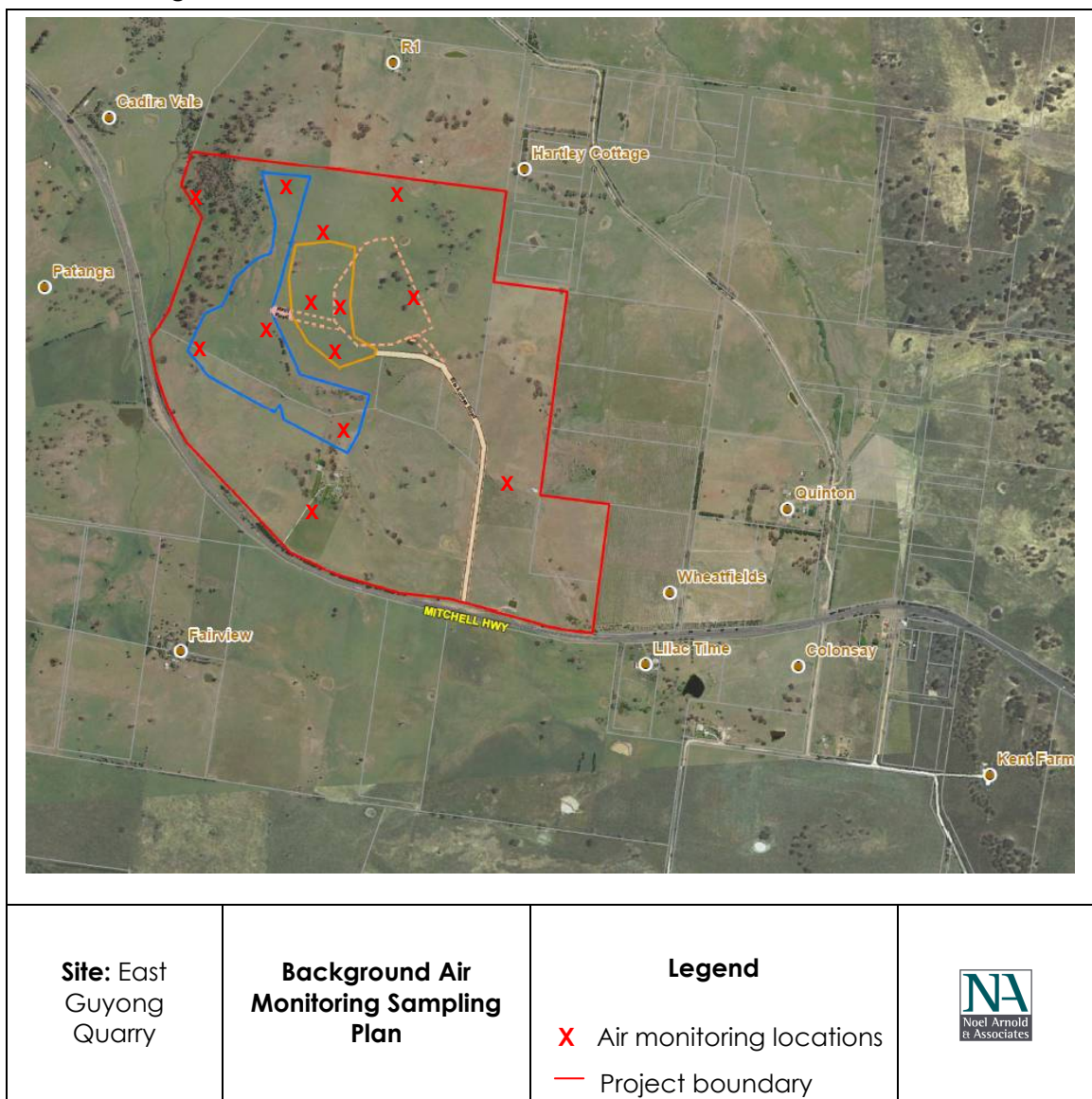
6.1.1 An asbestos fibre air monitoring protocol, as set out below, must be implemented in respect of the Project in order to ensure that the asbestos fibre levels generated at the Site do not exceed the Asbestos Impact Assessment Criterion (**AIAC**) of 0.01 fibres/ml.

### 6.2 Background Air Monitoring

6.2.1 Background asbestos fibre air monitoring must be undertaken at the locations indicated on **Figure 2**, being:

- (a) the Site boundaries (in the line of direction between the sensitive receptors such as residential housing and the IA);
- (b) eastern, northern and southern boundaries and the centre of the IA;
- (c) eastern, western, northern and southern boundaries of the Quarry Area; and
- (d) proximate to exposed NOA rock outcrops near the existing dam.

**Figure 2 – Monitoring Locations**

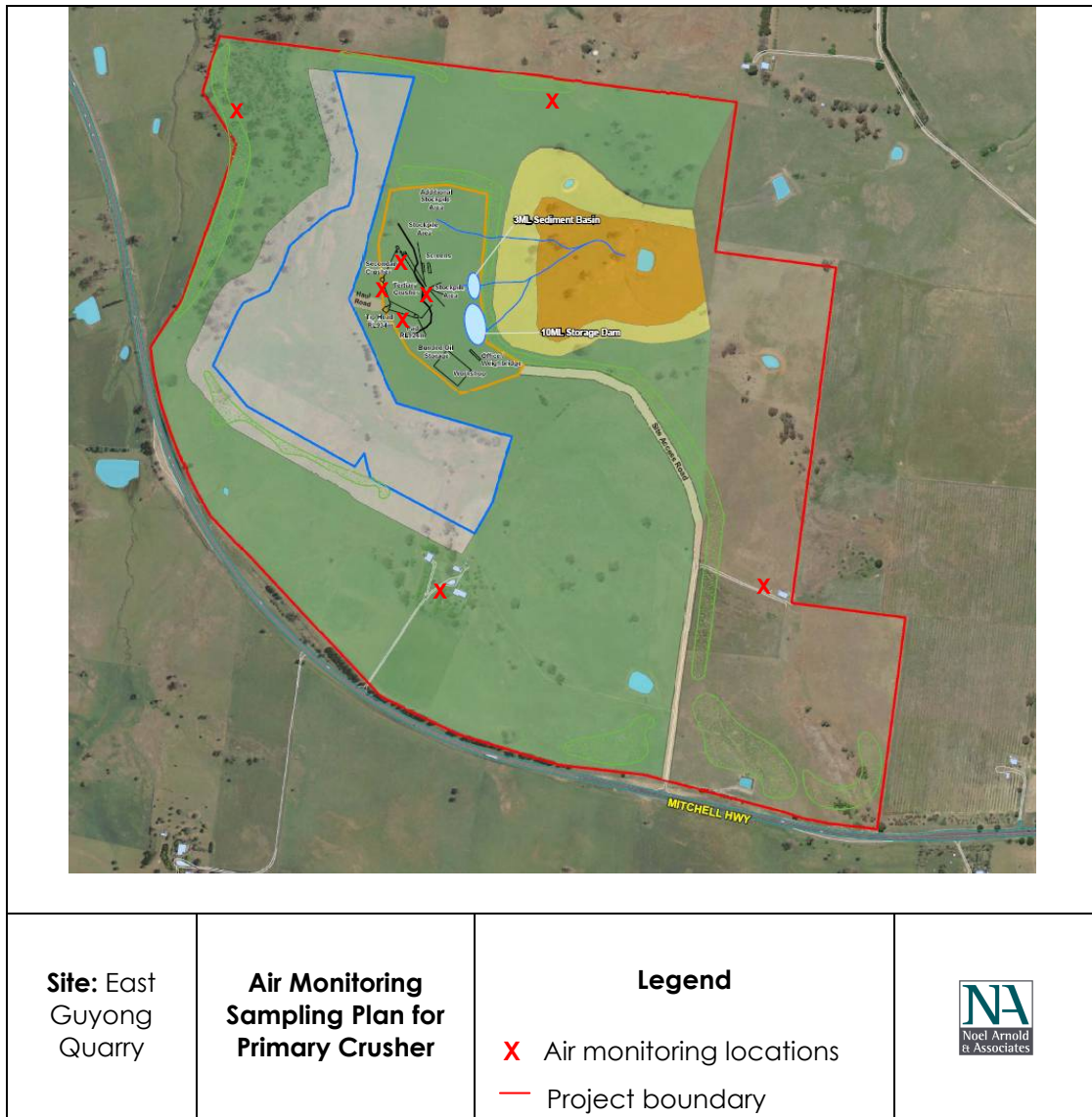


- 6.2.2 The purpose of the air monitoring is to ascertain the background ambient asbestos fibre levels at the Site prior to the commencement of Intrusive Works.
- 6.2.3 A minimum of five days of background asbestos air monitoring must be undertaken at the Site prior to the commencement of Intrusive Works.

**6.3 Daily Air Monitoring**

- 6.3.1 Control (static) asbestos fibre air monitoring must be undertaken on a daily basis at the following locations during all Intrusive Works:
  - (a) at a distance of no greater than 20 metres from the eastern, western, northern and southern perimeters of the immediate area of Intrusive Works;
  - (b) the Site boundaries (in the line of direction between the sensitive receptors such as residential housing and the IA); and
  - (c) the Site amenities such as change and lunch rooms.
- 6.3.2 Indicative asbestos air monitoring locations in respect of construction of the primary crusher are shown on **Figure 3**.

**Figure 3 – Monitoring Locations for Primary Crusher**



- 6.3.3 Where Intrusive Works are undertaken, personal (exposure) asbestos fibre air monitoring must be undertaken on the personnel conducting the Intrusive Works and in the immediate vicinity of the Intrusive Works.
- 6.3.4 Personal monitoring must be undertaken on all operators of plant and equipment such as excavators, drillers or backhoes during Intrusive Works.

#### **6.4 Weekly Air Monitoring**

- 6.4.1 Control and personal asbestos fibre air monitoring must be undertaken at the locations as indicated in **Figure 2** on a weekly basis for a three month period following the conclusion of Intrusive Works.

#### **6.5 Monthly Air Monitoring**

- 6.5.1 Control and personal asbestos fibre air monitoring must be undertaken on a monthly basis for the 12 month period thereafter at the locations as indicated in **Figure 2**.

#### **6.6 Continual Air Monitoring During Operation of the Quarry**

- 6.6.1 Control and personal asbestos fibre air monitoring must be undertaken at the locations as indicated in **Figure 2** on a bimonthly basis from sixteen months after conclusion of Intrusive Works and for the duration of the operation of the Quarry, except with the agreement of the Director-General.

#### **6.7 Air Monitoring Personnel**

- 6.7.1 Asbestos fibre air monitoring must be undertaken by suitably qualified and experienced personnel from a laboratory registered and accredited by the National Association of Testing Authorities (**NATA**) Australia or a licensed asbestos assessor.
- 6.7.2 All sampling and filter sample analysis must be undertaken by an NATA approved analyst (counter) and signatory.

#### **6.8 Air Monitoring Method**

- 6.8.1 All asbestos fibre air monitoring must be undertaken in accordance with the Membrane Filter Method as referenced in the "Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres", 2<sup>nd</sup> Edition [NOHSC:3003 (2005)].
- 6.8.2 All portable air sampling pumps must be located at a height between one and two metres from the ground or floor for control sampling and within the worker's breathing zone (for example, jacket or shirt lapel or collar) for personal exposure monitoring.
- 6.8.3 The sample volume of the air monitoring must be sufficient (but no greater than 1,000 litres) in order to achieve the detection or quantification limit of 0.01 fibres/mL.
- 6.8.4 The sampling period in respect of monitors located on the boundaries of the Quarry Area and IA must be representative of the work day and the activities undertaken with a minimum sampling period of no less than four hours.
- 6.8.5 The sampling period in respect of monitors located on the Site boundaries and Site amenities must be representative of the work day and the activities undertaken with sampling to occur at a minimum between the hours of 9am and 5pm.
- 6.8.6 Asbestos fibre air monitoring results must be analysed in a NATA-accredited laboratory using phase contrast microscopy (**PCM**).

#### **6.9 Reporting**

- 6.9.1 The following information must be included on the air monitoring report:
- (a) the name or letterhead of the organisation conducting the works;
  - (b) the NATA accreditation symbol and laboratory accreditation number;
  - (c) the date of the report;
  - (d) the name(s) of the persons conducting the sampling and analysis;



- (e) the name(s) and signature of the person analysing the sample filters (the counter) and authorising the report (the signatory);
  - (f) the location of the monitoring points;
  - (g) the date of the monitoring;
  - (h) the location and activities undertaken during the sampling period (for example, excavation works for the primary crusher);
  - (i) the sampling time started and ended for each sampling location;
  - (j) the sample identification number;
  - (k) the average flow rate;
  - (l) the analytical method used;
  - (m) the number of fibres and fields counted for each sample; and
  - (n) the fibre concentration for each sample.
- 6.9.2 The monitoring locations must be marked-up on a Monitoring Plan for each sampling day. The marked-up Monitoring Plan must be attached to the Asbestos Air Monitoring Report.
- 6.9.3 The weather conditions (for example, dry and fine, overcast or raining), wind speed and direction must also be recorded on the Monitoring Plan for each sampling day.

### 6.10 Air Monitoring Verification

- 6.10.1 All air monitoring results which exceed the quantification limit of 0.01 fibres/mL (the **Quantification Limit**) must be submitted for confirmation purposes, in which either scanning electron microscopy (**SEM**) or transmission electron microscopy (**TEM**) must be used to clarify whether the fibres counted by PCM are asbestiform or non-asbestiform fibres.
- 6.10.2 All air monitoring results which exceed the Quantification Limit must be sent to an approved external laboratory for confirmation analysis by SEM or TEM as to whether there has been an exceedence of the AIAC. Approved external laboratories are listed in **Table 3**.

**Table 3 – Approved Laboratories for External Testing**

External Laboratories for Confirmation Analysis	Address & Contact Details
Western Australian Chem Centre	PO Box 1250 Bentley WA 6983 08 9422 9800
MPL Laboratories Pty Ltd	16-18 Hayden Place Myaree WA 6154 08 9317 2505
Pickford & Ryder Consulting Pty Ltd	PO Box 1422 Lane Cove NSW 2066

### 6.11 Summary of Asbestos Air Monitoring Protocol

- 6.11.1 Table 4 provides a summary of the Asbestos Air Monitoring Protocol.

Table 4: Asbestos Air Monitoring Protocol		
Step	Time Frame Action	Key Actions and Description

<b>Table 4: Asbestos Air Monitoring Protocol</b>		
<b>Step</b>	<b>Time Frame Action</b>	<b>Key Actions and Description</b>
1	Appointments	<ul style="list-style-type: none"> <li>Engage an NATA accredited asbestos air monitoring consultant or a licensed asbestos assessor to conduct asbestos fibre air monitoring for the Project.</li> </ul>
2	Preliminary Monitoring	<ul style="list-style-type: none"> <li>Background monitoring for a minimum of five days prior to commencement of the construction of all infrastructure.</li> </ul>
3	During Intrusive Works	<ul style="list-style-type: none"> <li>Daily asbestos fibre air monitoring.</li> </ul>
4	For Three Months After Conclusion of Intrusive Works	<ul style="list-style-type: none"> <li>Weekly asbestos fibre air monitoring.</li> </ul>
5	For 12 Months Thereafter	<ul style="list-style-type: none"> <li>Monthly asbestos fibre air monitoring.</li> </ul>
6	For Duration of Operation of Quarry	<ul style="list-style-type: none"> <li>Bimonthly asbestos fibre air monitoring.</li> </ul>

## **7. Asbestos Fibre Air Monitoring Notification Protocol**

### **7.1 Reporting Time-Frames of Asbestos Monitoring Results**

- 7.1.1 A NATA accredited asbestos monitoring report must be provided to the Hanson Project Manager during Intrusive Works and to the Hanson Quarry Manager during operation of the Quarry.
- 7.1.2 The NATA accredited asbestos fibre air monitoring report must be provided to the relevant party stated in Section 7.1.1 within four hours of completion of the air monitoring on each day air monitoring is to occur.
- 7.1.3 All results of the confirmation analysis by SEM or TEM as described in Section 6.10 must be provided to Hanson within five days from the provision of the initial asbestos fibre air monitoring report as described in Section 7.1.2.
- 7.1.4 Copies of all asbestos fibre air monitoring reports must be displayed at a prominent location such as the main noticeboard and amenities area. The asbestos air monitoring reports must be readily accessible to all workers and others on the Site.

### **7.2 Notification of Asbestos Monitoring Results**

- 7.2.1 All asbestos fibre air monitoring results must be made publically available on Hanson's website within one month of the results becoming available.
- 7.2.2 All asbestos fibre air monitoring results must be reported quarterly to the following parties:
  - (a) the Director-General;
  - (b) any neighbouring landowners or tenants (including tenants of quarry-owned properties) located within one kilometre of the Site boundary (unless the neighbouring landowner or tenant asks not to receive such reporting);
  - (c) it will be sufficient for the purposes of paragraph (b) for Hanson to make asbestos fibre air monitoring results publicly available on its website.
- 7.2.3 All asbestos fibre air monitoring results must be reported in the Annual Review as described in Item 3 of Schedule 5 of the Project Approval.

### **7.3 Record Keeping**

- 7.3.1 All asbestos fibre air monitoring reports must be kept by Hanson securely on Site and must be made available to the Director-General or to a neighbouring landowner or tenant located within one kilometre of the Site boundary upon request.

## **8. Asbestos Air Fibre Exceedance Protocol**

### **8.1 Exceedance of Quantification Limit**

- 8.1.1 In the event of an identified exceedance of the Quantification Limit at one or more monitoring locations, the following steps must be undertaken.
- 8.1.2 All Intrusive Works and/or quarrying activity must be ceased in the immediate vicinity of the monitoring location recording the exceedance of the Quantification Limit.
- 8.1.3 The immediate work area must be isolated and secured using appropriate barriers such as fencing, ropes and tape and also warning signage.
- 8.1.4 Dust suppression techniques must be utilised to control dust emissions.
- 8.1.5 Intrusive Works and/or quarrying activity must not be resumed in the immediate vicinity of the monitoring location recording the exceedance of the Quantification Limit until:
  - (a) the results of confirmation analysis conducted in accordance with Section 6.10 are received;
  - (b) the results of confirmation analysis indicate that the fibres counted by PCM resulting in the exceedance of the Quantification Limit are non-asbestiform fibres.

### **8.2 Exceedance of AIAC**

- 8.2.1 In the event that the results of confirmation analysis record an exceedance of the AIAC, the following steps must be undertaken.

### **8.3 Mitigation**

- 8.3.1 All Intrusive Works and/or quarrying activity must be ceased within a radius of no less than 25 metres from the monitoring location recording the exceedance of the AIAC.
- 8.3.2 The work area within a radius of no less than 25 metres from the monitoring location recording the exceedance of the AIAC must be isolated and secured using appropriate barriers such as fencing, ropes and tape and also warning signage.
- 8.3.3 Dust suppression techniques must be utilised to control dust emissions.

### **8.4 Investigation**

- 8.4.1 An investigation must be undertaken by a NATA accredited asbestos consultant or licensed asbestos assessor with at least three years experience in NOA or asbestos contaminated soil in order to determine the cause of the exceedance of the AIAC.
- 8.4.2 The investigation must be undertaken in consultation with Hanson employees, contractors or subcontractors involved with Intrusive Works on the Site.
- 8.4.3 A report of the investigation findings and recommendation must be submitted to Hanson within five days of receipt of the confirmation analysis indicating the AIAC exceedance.

### **8.5 Additional Air Monitoring**

- 8.5.1 Control and personal asbestos fibre air monitoring must be undertaken on a daily basis for a one week period at the following locations:
  - (a) the source of the elevated monitoring results;
  - (b) the immediate vicinity of work areas;
  - (c) Site boundaries (in the line of direction between the sensitive receptors such as residential housing and the IA); and
  - (d) Site amenities such as change and lunch rooms.



8.5.2 If there is no exceedance of the Quantification Limit within the one week period, the control and personal asbestos fibre air monitoring as set out in Section 8.5.1 must be undertaken on a weekly basis for a three month period.

8.5.3 If there is no exceedance of the Quantification Limit within the three month period, the control and personal asbestos fibre air monitoring must be undertaken in accordance with the continual monitoring as outlined in Section 6.6.

## 8.6 Notification

8.6.1 All asbestos fibre air monitoring results recording an exceedance of the AIAC must be reported to the following parties within one day of receipt:

- (a) the Director-General;
- (b) neighbouring landowners and tenants (including tenants of quarry-owned properties) located within one kilometre of the Site boundary.

## 8.7 Resumption of Works

8.7.1 Intrusive Works and/or quarrying activity within a radius of no less than 25 metres from the monitoring location recording the exceedance of the AIAC must not resume until:

- (a) the report on the investigation findings prepared in accordance with Section 8.4.3 has recommended that works resume;
- (b) air monitoring conducted in accordance with Section 8.5.1 indicates that there has been no exceedance of the Quantification Limit subsequent to the recorded exceedance of the AIAC; and
- (c) the relevant parties have been notified of the exceedance of the AIAC in accordance with Section 8.6.1.

## 8.8 Revision of Control Measures

8.8.1 Once the cause of the exceedance of the AIAC is identified, control measures must be revised to ensure that future exceedances do not occur.

8.8.2 Authorised Hanson personnel must inspect, at least on a daily basis, all Intrusive Works or other works identified in the investigation report in order to ensure appropriate control measures in particular dust suppression techniques are implemented.

8.8.3 On-site work practices must be modified to ensure all further monitoring results are below the AIAC.

## 8.9 Summary of Air Monitoring Action Levels and Required Controls & Actions

8.9.1 **Table 5** outlines relevant control levels and corresponding actions required.

Action Level	Controls / Actions
Quantification Limit less than or equal to 0.01 fibres/ml	Continue with and review control measures
Quantification Limit greater than 0.01 fibres/ml	Cease Intrusive Works and/or quarrying activity in the immediate affected area Isolate and secure the immediate affected work area with barriers and warning signage Employ dust suppression techniques Await results of confirmation analysis If confirmation analysis indicates no exceedance of AIAC, then works may resume
AIAC less than or equal to 0.01	Continue with and review control measures
AIAC greater than 0.01	Cease Intrusive Works and/or quarrying activity

	<p>within radius of no less than 25 metres from monitoring location recording exceedance</p> <p>Isolate and secure the work area within radius of no less than 25 metres from monitoring location recording exceedance with barriers and warning signage</p> <p>Employ dust suppression techniques</p> <p>Communicate to all workers via tool box talks, safety memos of the location of the affected area(s), that the area is restricted to authorised personnel only and other relevant information such as air monitoring results, investigation in progress or findings, controls to be implemented</p> <p>Engage NATA accredited asbestos consultant or licensed asbestos assessor to assist in the investigation and provide appropriate advice</p> <p>Notify relevant stakeholders including Director-General and potentially affected landowners and tenants that work has ceased in area and the air monitoring results</p> <p>Conduct asbestos fibre air monitoring in the potential source areas</p> <p>Only resume works once recommended by investigation report, air monitoring results record no exceedance of Quantification Limit and relevant parties have been notified of exceedance</p> <p>Find cause and review and revise control measures</p> <p>Modify on-site work practices to ensure all further monitoring results are below the AIAC</p>
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## 9. Incident Protocol in Event of Exposure to NOA

- 9.1.1 In the event of exposure of any person (whether personnel, neighbours or others) to NOA as a result of activities on the Site, the following actions must be taken if the asbestos fibre air monitoring results exceed the AIAC:
- (a) the Hanson Project Manager or Hanson Quarry Manager (as may be relevant) must notify their Human Resources and/or Occupational Health and Safety Manager the details of the event of exposure to NOA within 24 hours of receipt of the exceedance;
  - (b) the Hanson Project Manager or Hanson Quarry Manager (as may be relevant) must notify NSW WorkCover, I&I NSW and affected landowners of the event of exposure to NOA within 24 hours of the exceedance; and
  - (c) Hanson must provide information to the workers and other stakeholders (such as potentially affected landowners), including a fact or information sheet outlining the situation, their potential exposure and controls to be implemented.
- 9.1.2 In the event of exposure of any person (whether personnel, neighbours or others) to NOA, the following actions must be taken if the asbestos air monitoring results exceed the exposure standard of 0.1 fibres/mL<sup>8</sup>:
- (a) the actions as required by Section 9.1.1;
  - (b) subject to the consent of the persons exposed or potentially exposed, health surveillance of the persons (including potentially affected workers, visitors and landowners in the immediate vicinity of the monitoring locations which registered the exceedance and personnel working in the affected area where the exceedance occurred) must be undertaken by Hanson's authorised medical practitioner, or if the person exposed does not consent to surveillance by Hanson's authorised medical practitioner, an independent medical practitioner nominated by that person; and
  - (c) the type of health surveillance must include occupational and demographic data, medical interview and records of personal exposure as defined in Clause 165 of the *Occupational Health and Safety Regulation 2001*.

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<sup>8</sup> As defined in the Worksafe Australia [National Occupational Health and Safety Commission (NOHSC)] 'Exposure Standards for Atmospheric Contaminants in the Occupational Environment,' May 1995 and from the Hazardous Substances Information System (HSIS) database on the Safe Work Australia website.

## 10. Key Responsibilities

10.1 The following table summarises the relevant parties involved in the Project and their key responsibilities on the Site.

**Table 6 – Key Responsibilities of Relevant Parties**

Role	Company	Responsibility
Principal	Hanson Construction Materials Pty Ltd	<input type="checkbox"/> Project Manager <input type="checkbox"/> Design & Project works
Hanson Project Manager	Hanson Construction Materials Pty Ltd	<input type="checkbox"/> Control of all Intrusive Work associated with the IA.
Hanson Quarry Manager	Hanson Construction Materials Pty Ltd	<input type="checkbox"/> Control of all activities associated with the extraction of the resource and general ongoing operations of the quarry.
Principal Contractor	Nominated by or Hanson Construction Materials Pty Ltd	<input type="checkbox"/> Control of all subcontractors and associated works
Authorised Geologist	Nominated by Hanson Construction Materials Pty Ltd and approved by the Director-General	<input type="checkbox"/> Inspection of the exploratory drill hole cuttings <input type="checkbox"/> Inspection / investigation of extent of BV where discovered
Authorised Blasting Officer	Nominated by Hanson Construction Materials Pty Ltd and approved by the Director-General	<input type="checkbox"/> Inspection of Authorised Geologist's report and site conditions. <input type="checkbox"/> Investigation to determine whether blasting will not disturb BV
NATA accredited Asbestos Consultant (and licensed asbestos assessor)	Nominated by Hanson Construction Materials Pty Ltd	<input type="checkbox"/> Asbestos air monitoring and reporting <input type="checkbox"/> Investigation of results exceeding AIAC <input type="checkbox"/> Consulting advise where required
Licensed AS-1 Asbestos Contractor	Nominated by Hanson Construction Materials Pty Ltd	<input type="checkbox"/> Remove and dispose of NOA waste materials, where required
Waste Disposal Facility	Nominated Waste Disposal Facility	<input type="checkbox"/> NOA spoil material to be transported to the designated waste facility under the Office of Environment & Heritage (only if NOA spoil is created)

## 11. Further Inquiries

11.1 If you have any further inquiries about the Asbestos Management Plan, please contact:

Project Contact Details.			
Name:	Company:	Project Involvement:	Number:

## APPENDIX A – Asbestos Awareness Training

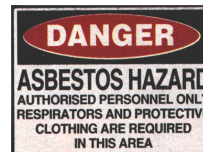
- A1 Prior to the commencement of any Intrusive Works, all Hanson employees, contractors and sub-contractors involved in Intrusive Works must be provided with appropriate training, information and instructions.
- A2 The awareness training must include the following:
- (a) background information on NOA materials;
  - (b) asbestos related health effects and risks;
  - (c) asbestos materials related legislation and guidelines;
  - (d) scheduled Intrusive Works;
  - (e) planned control measures to be utilised for Intrusive Works;
  - (f) personnel protective equipment (**PPE**) requirements;
  - (g) overview of the Asbestos Management Plan; and
  - (h) responsibilities of all stakeholders.
- A3 The asbestos awareness training must be undertaken by a NATA accredited asbestos consultant or a person with similar competencies and experience.

## APPENDIX B – Asbestos Clean Up or Removal Works

The following procedures must be implemented by an AS-1 licensed asbestos contractor and Hanson for any clean-up works in the IA or other areas of the Site where NOA or BV materials have been encountered and/or disturbed during any Intrusive Works.

### B1 Warning Signage

- B1.1 The NOA affected area must be defined by barriers (for example, temporary fencing or barrier tape) and by appropriately placed signs.
- B1.2 The signs at the entry points to the work area should be generally be in accordance with the following:



- B1.3 Warning signs must conform with the Australian Standard 1319 – *Safety Signs for the Occupational Environment*.

### B2 Personal Protective Equipment (PPE)

- B2.1 The following PPE is required to be worn during the handling (but not inspection) of suspected NOA or BV materials or within a designated NOA area:
- disposable half-face particulate respirator (P2 rated) complying with the Australian/New Zealand Standard 1715 and 1716;
  - disposable coveralls made from either 100% synthetic material or a mixed natural / synthetic fabric to ensure protection against fibre penetration.

### B3 Decontamination Procedures

- B3.1 Personnel must undertake the following decontamination procedures at the end of each work shift or break such as morning tea, lunch and afternoon tea,:
- remove and dispose of disposable respirator and coveralls;
  - place disposable respirator and coveralls in an asbestos waste bags or appropriate containers; and
  - wash hands and face.
- B3.2 A decontamination area must be established on the Site for the use of the personnel handling known or suspected NOA or BV materials. The decontamination area will comprise a segregated area where the contaminated work clothing and respirators are removed and discarded.
- B3.3 Any plant or equipment that is to be removed from the NOA affected area of the Site must be washed down in a designated area using water spray techniques to ensure no NOA spoil material remains. This includes vehicles travelling in and out of designated asbestos areas, plant machinery equipment and hand excavation tools.

### B4 NOA Waste On-Storage

- B4.1 Any NOA spoil material must be placed in a secured area which is either within a designated lockable shed or designated area which has appropriate surrounding barriers.
- B4.2 The secured NOA waste storage area must be appropriate signposted.
- B4.3 The NOA waste material must be disposed off site as soon as practicable.

**B5 NOA Waste Disposal**

- B5.1 Disposable gloves and respirators must be placed in asbestos waste bags or appropriate containers.
- B5.2 Waste bags must be twisted tightly, folded over and the neck secured in the folded position with adhesive tape, or any other effective method.
- B5.3 Waste bags must not be used for other waste and should be removed from the Site daily and transported securely to a designated and signposted asbestos waste bin (see pictured).
- B5.4 When the waste bin becomes full, the asbestos waste bags must be disposed of at the local waste depot that can accept asbestos waste.
- B5.5 Disposal permits or certificates must be sought and authorised at the completion of the disposal operation. Documentation must be filed with all relevant asbestos documentation for the project, and a copy forwarded to Hanson.
- B5.6 Disposal of any excess spoil which cannot be returned to the excavation must be classified in accordance with the NSW Environmental Protection Agency 'Environmental Guidelines: Assessment, Classification and Management of Liquid & Non-Liquid Wastes (EPA-NSW 99/21, May 1999)'.
- B5.7 Transportation and disposal of asbestos contaminated wastes must be conducted in accordance with the requirements of Section 29 of the *Protection of the Environment Operations (Waste) Regulation 1996*.

