Appendix 16

Hazard Impact Assessment

Appendix Section	Description
16A	Hazard Impact Assessment

Brandy Hill Expansion Project

Environmental Impact Statement

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Environmental Impact Statement

Hazards

Consideration has been made as to whether the Project should be considered a hazardous or potentially hazardous industry under State Environmental Planning Policy 33 – Hazardous and Offensive Development (SEPP 33). In accordance with the risk screening method provided by the Department of Planning and Environment document ***Hazardous and Offensive Development Application Guidelines Applying SEPP 33***, the following presents the details of the determination as to the classification of the Project under SEPP 33.

Industries or projects determined by the risk screening to be hazardous or potentially hazardous would require the preparation of a Preliminary Hazard Analysis (PHA) in accordance with Clause 12 of SEPP 33. No further assessment under SEPP 33 is required for projects not considered potentially hazardous.

1. SEPP 33 (Hazardous & Offensive Development)

Definitions of "potentially hazardous industry" and "potentially offensive industry"

In this Policy:

potentially hazardous industry means a development for the purposes of any industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would pose a significant risk in relation to the locality:

(a) to human health, life or property, or

(b) to the biophysical environment, and includes a hazardous industry and a hazardous storage establishment.

potentially offensive industry means a development for the purposes of an industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would emit a polluting discharge (including for example, noise) in a manner which would have a significant adverse impact in the locality or on the existing or likely future development on other land, and includes an offensive industry and an offensive storage establishment.

A project application to carry out development that may be a potentially hazardous industry must prepare a preliminary hazard analysis in accordance with the guidelines published by the Department of Planning and Environment.

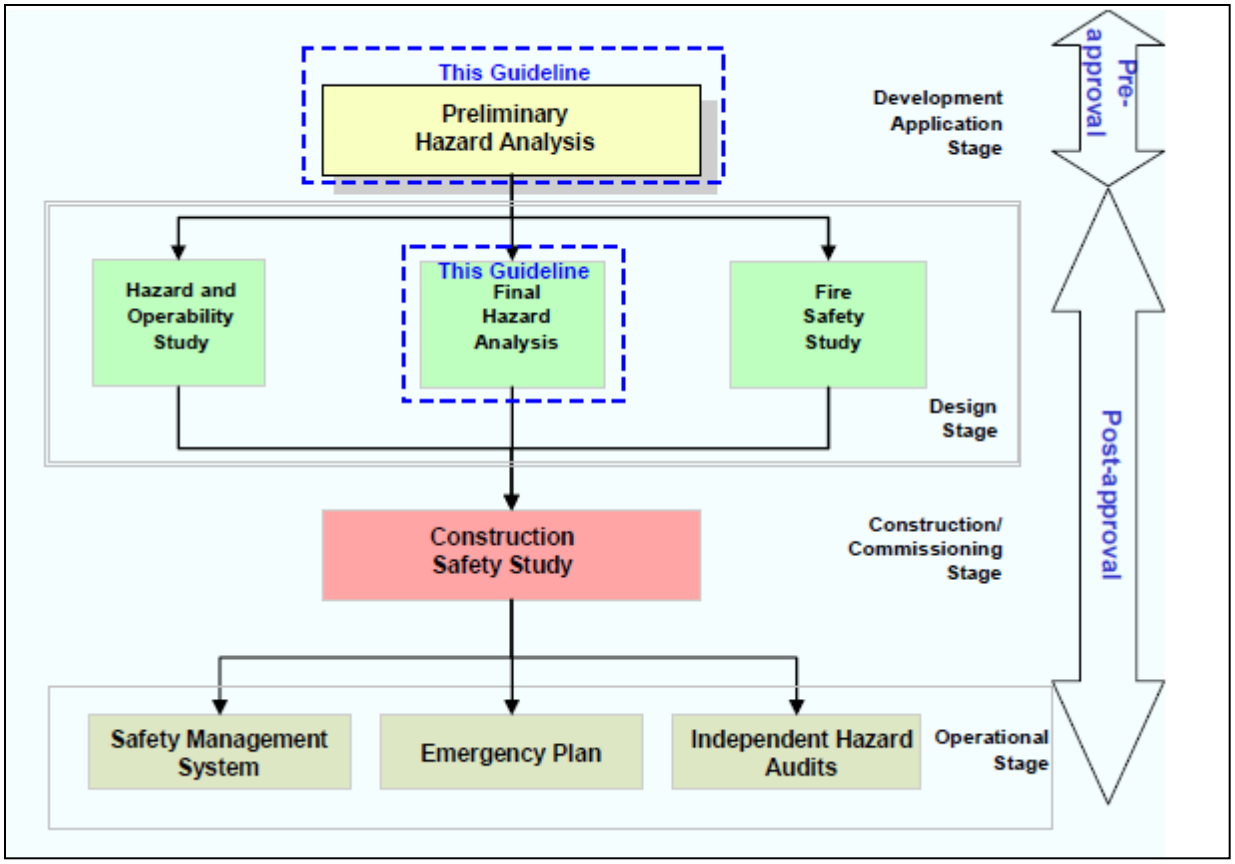

Figure 1: The Hazards-Related Assessment Process (Source: Hazardous Industry Planning Advisory (HIPAP) 6)

1.1. Hazard Analysis

In assessing the quarry development proposal, the emphasis is on preventing or minimising major hazardous incidents on-site, such as fire and explosion or the release of significant quantities of toxic or biologically harmful chemicals that could result in significant off-site effects.

The assessment of the suitability of the site to accommodate existing or proposed development of a potentially hazardous nature must be based on consideration of:

- the nature and quantities of hazardous materials stored and processed on the site;
- the type of plant and equipment in use;
- the adequacy of proposed technical, operational and organisational safeguards;
- the surrounding land uses or likely future land uses; and
- the interactions of these factors.

This information is incorporated into the Project's hazard analysis. The objective of hazard analysis is to develop a comprehensive understanding of the hazards and risks associated with the quarry operation and of the adequacy of safeguards.

1.2. Risk Screening

Hazardous materials are defined within DP&E ***Hazardous and Offensive Development Application Guidelines Applying SEPP 33*** (2011), as substances falling within the classification of the Australian Code for Transportation of Dangerous Goods by Road and Rail (Dangerous Goods Code). Based on this definition, the hazardous materials to be stored on the Brandy Hill quarry project site, quantities and storage location are summarised in **Table 1**.

Table 1: Hazardous material storage at the Brandy Hill quarry site

Material	Australian Dangerous Goods Class	Description	Storage Quantity	Storage Location	SEPP 33 Trigger
Diesel Fuel	Class 3, C1	Combustible liquids: flashpoint above 61°C but not exceeding 150°C	55 000L	Above ground tank	Diesel would not be stored with other Class 3 materials and would therefore not be subject to the *Applying SEPP 33*.
Lubricating and hydraulic oils and grease	Class 3, C2	Combustible liquids flashpoint above 150°C	10 000kg	Workshop Area	Lubricating and hydraulic oils and grease would not be stored with other Class 3 materials and would therefore not be subject to the *Applying SEPP 33*.
Precoat Supa 30	Class 3, C1		50,000L	On ground tanks	Precoat Supa 30 would not be stored with other Class 3 materials and would therefore not be subject to the *Applying SEPP 33.*
Industrial grade oxygen	2.2	Non-flammable, non-toxic gases: gases which are neither flammable nor poisonous whether compressed or cryogenic.	70m3	Workshop Area - G & E size cylinders	Not considered to be potentially hazardous with respect to off-site risk.
Industrial grade acetylene	2.1	Flammable gases (gases which ignite on contact with an ignition source).	50m3	Workshop Area - G & E size cylinders	Quantity below the threshold of 500 kg therefore not subject to *Applying SEPP 33.*
LPG	2.1	Flammable gases (gases which ignite on contact with an ignition source).	50kg	Workshop Area	Quantity below the threshold of 10 tonne therefore not subject to *Applying SEPP 33*.
Unleaded Petrol	Class 3, PGII	Flammable liquids: flashpoint of less than 23° C and boiling point above 35° C.	40L	Workshop Area	Quantity below the threshold of 5 tonne therefore not subject to *Applying SEPP 33.*

Diesel would not be stored with Class 3 materials and would therefore not be subject to the *Applying SEPP 33* thresholds. Lubricating and hydraulic oils and grease would not be stored with Class 3 materials and would therefore not be subject to the *Applying SEPP 33* thresholds. Industrial grade oxygen is a class 2.2 dangerous good and is therefore not subject to the *Applying SEPP 33* thresholds. Individual cylinders containing acetylene would not trigger the *Applying SEPP 33* thresholds (100 kilograms (kg)). Maximum stored inventories (250 kgs) would also be located more than 25 metres (m) away from the nearest site boundary and would therefore also not trigger the *Applying SEPP 33* thresholds if considered in aggregate.

Lubricating and hydraulic oils and

Diesel fuel.

Acetylene and oxygen gas bottles.

Precoat Supa 30.

Figure 2: Chemical Storage

Considerations for the transport of dangerous goods and hazardous materials to site are outlined in **Table 2**. Potential transportation hazards and risks have been considered through comparison of the type, quantity and frequency of dangerous goods and hazardous materials transportation with the thresholds presented in the *Applying SEPP 33* guideline. In all cases, the transportation of dangerous goods and hazardous materials to the project site would be below the *Applying SEPP 33* thresholds. This indicates that risks associated with transport of dangerous goods and hazardous materials are unlikely to be significant.

Table 2: Hazardous material transportation at the Brandy Hill quarry site

Material	Australian Dangerous Goods Class[1]	Transport frequency	Transport quantity	SEPP 33 Trigger
Diesel Fuel	Not classed as a dangerous good and would not be transported with Class 3 dangerous goods. It is therefore not subject to the applying SEPP 33 transportation thresholds.	Fortnightly	35,000L	No
Lubricating and hydraulic oils and grease	Not classed as a dangerous good and would not be transported with Class 3 dangerous goods. It is therefore not subject to the applying SEPP 33 transportation thresholds.	Monthly	2000L	No
Precoat Supa 30	Not classed as a dangerous good and would not be transported with Class 3 dangerous goods. It is therefore not subject to the applying SEPP 33 transportation thresholds.	Monthly	27,000L	No
Industrial grade oxygen	2.2	Monthly	4 x G size	No. Below the minimum thresholds.
Industrial grade acetylene	2.1	Monthly	4 x G size	No. Below the minimum thresholds.
LPG	2.1	6 monthly	50kg	No. Below the minimum thresholds.

Unleaded Petrol	C3, PGII	Monthly	20L	No. Below the minimum thresholds.
Note: 1- Criteria of the "Australian Code for the Transportation of Dangerous Goods by Road and Rail"				

Additional small quantities of other materials may be required on-site from time to time to support occasional maintenance activities. Comparison of the types and quantities of dangerous goods and hazardous materials to be stored on-site with the thresholds in the *Applying SEPP 33* guideline demonstrates that operational inventories would not pose a significant risk of harm beyond the site boundary.

2. Bushfires

The land is subject to bushfire risk as identified by bushfire mapping prepared by Port Stephens Council (see **Figure 3** which shows the affected areas). As noted in **Figure 3**, most of the existing quarry pit is not bushfire prone land. However the perimeter of the disturbed quarry areas are mapped as vegetation buffer -100m & 30m.

The nature of the proposed development will not increase or adversely impact on the potential or severity bushfires in the locality. The proposed development involves the clearing of land mapped as Vegetation Category 1. This will result in a reduction in bushfire fuel loads.

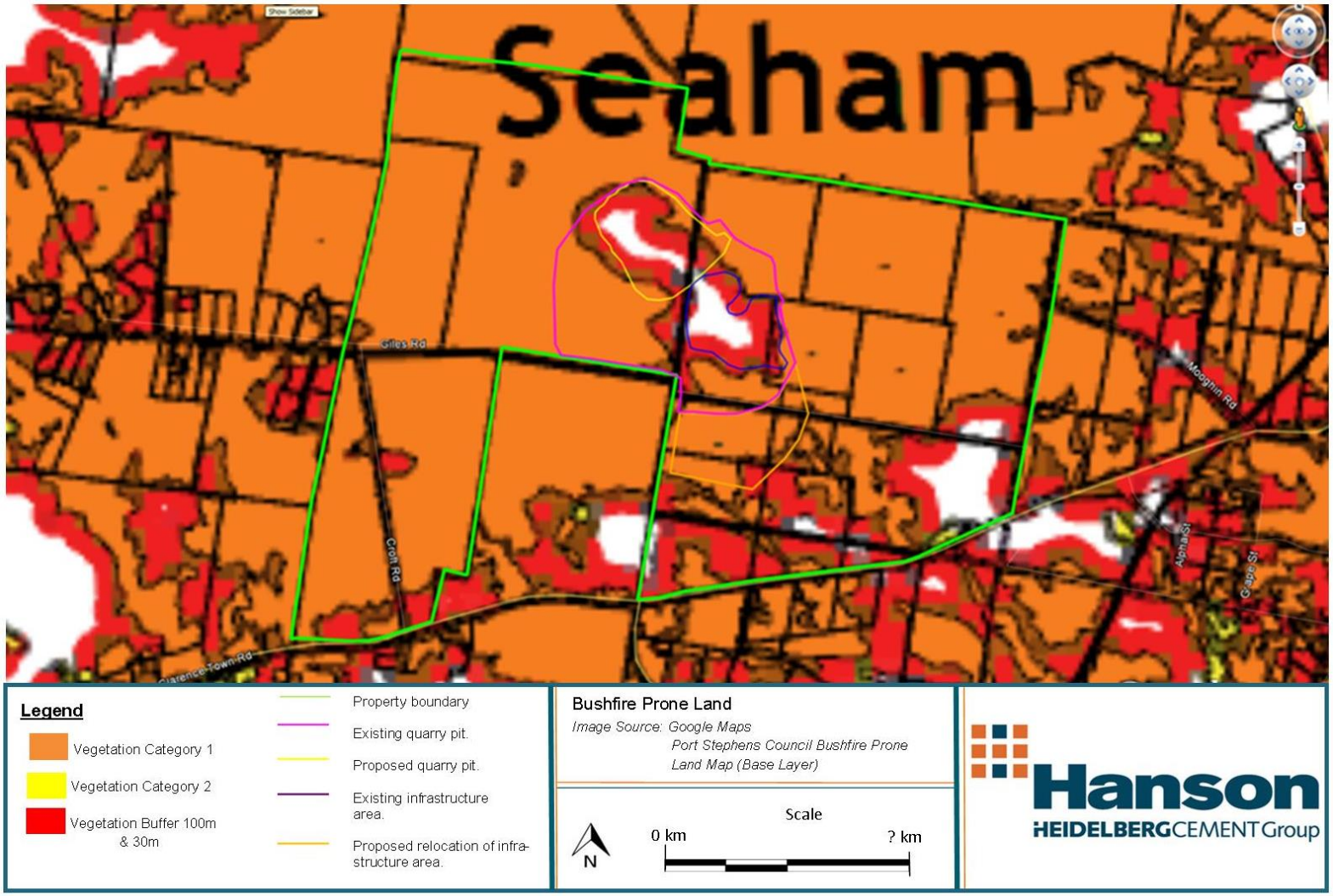

Figure 3: Port Stephens Council Bushfire Prone Land Map, Brandy Hill Quarry

2.1. Bushfire Prevention

For a bushfire to occur there are three factors which must be present, namely oxygen, fuel and an ignition source, and several other factors which affect the progress of a bushfire. While exclusion of oxygen is not feasible, each of the remaining issues will be managed as follows.

- Fuel loads within the Site will be managed through:
    - An asset protection zone of 10m will be established around all built structures within the Infrastructure Area, including areas where hydrocarbons may be stored, and the Site Access Road.
    - Trees and shrubs will be maintained in such a manner that the vegetation is not continuous, taking into account the requirement for an effective visual screen, and grass will be maintained.
- Company-controlled ignition sources and the associated management measures that will be implemented include the following.
    - Mobile Equipment
    - All Quarry-related activities will be undertaken, where practicable, in cleared areas.
    - All mobile equipment will be maintained in good working order with appropriate exhaust and fire suppression systems.
    - All mobile equipment working in vegetated areas will be inspected to ensure that they do not pose a risk of starting a bushfire. This will include inspection of exhaust and electrical systems, including, in the case of vehicles using unleaded petrol, catalytic converters.
    - Mobile equipment working in vegetated areas will not be left unattended with the engine running.

2.2. Bushfire Control

Effective bushfire control depends upon available fuel, control of ignition sources and good access and water supplies;

While the possibility of ignition of bushfire's within the quarry void and infrastructure area is limited, the following fire management procedures will be adopted to assist with problems on neighbouring sites and, reduce the likelihood of an event at the quarry:-

- Provision of access to strategic areas on the site
- Provision of water from the sedimentation dams
- Stockpiling of cleared vegetation with a minimum 10m cleared buffer zone
- Creating suitable located fire breaks