BESIX Watpac

Barangaroo Station

Air Quality Management Procedure

N217

BR COP

28 February 2023

Project overview

Project Site Address:
25 Hickson Road
Barangaroo
NSW 2000

Project Commencement Date:
12 March 2021

BESIX Watpac State Division Address:
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BESIX Watpac Approvals

Name	Role & Title	Signature	Date
[redacted]	Author / Planning & Environment Manager	[redacted]	28/02/2023
[redacted]	Reviewer / Construction Manager	[redacted]	28/02/2023
[redacted]	Reviewer / Project Director	[redacted]	28/02/2023

Note: A controlled copy of the Air Quality Management Procedure will be distributed to the Sydney Metro Principal's Representative, Independent Certifier (IC) and other nominated stakeholders, and it will be made available to all BR COP employees and subcontractors in soft copy format through the project document control system.

This procedure, when printed, will be uncontrolled and it will the responsibility of each user to confirm the currency of the plan through the project document control system.

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Air Quality Management Procedure

1.1 Document Purpose

The purpose of the Air Quality Management Procedure is to minimise the impacts of construction activities related to the Barangaroo Construct Only Package (BR COP) to air quality and receivers in proximity to the construction site.

1.2 Construction Overview

An overview of BR COP construction activities is presented below:

- Structural and civil completion works to the station box;
- Stormwater trunk mains works from Hickson Road precinct to the existing pit at the western end of the Site;
- Installation of a cooling water system within the Barangaroo cutaway and associated trenching and pipework including the connection of the system to an existing network of pipes in Sydney Harbour;
- Demolition works associated with the removal of the Hickson Road temporary steel structure, road deck and concrete demolition;
- Hickson Road precinct works including road, footpath, cycleway, landscaping, street lighting, stormwater, utilities works and ventilation pod risers;
- Backfilling and surface reinstatement of the temporary northern (Hickson Road) shaft; and,
- Staging and temporary works required to deliver the permanent works, including removal of the temporary Hickson Road bridge structure.

1.3 Potential Impacts

Dust, and other emissions, being generated on Site because of construction activities may have the following negative impacts:

- Dust and the emissions from vehicle and other construction plant and equipment can have adverse health impacts on local residents as well as people working and carrying out recreational activities in proximity to the Site;
- Dust can settle on and impact property, resulting in community complaints and the need to carry out significant cleaning and potentially damage to property;
- Dust emissions offsite can cause the Site to be shut down and/or result in prosecution by the regulator; and,
- Odours from construction activities can travel beyond the boundary of the Site causing nuisance to local receivers and users of the adjacent Sydney Harbour.

1.4 Air Quality Management Objectives

The Chatswood to Sydenham Construction Environment Management Framework (CEMF) is part of a broader report, the Chatswood to Sydenham Environmental Impact Assessment (EIS) and the Chatswood to Sydenham Submissions and Preferred Infrastructure Report (SPIR).

The CEMF nominates the following environmental performance outcome during construction:

- Dust and exhaust emissions during construction would be minimised.

Further, Section 16.1 of the CEMF identifies the following air quality objectives applicable to construction:

- Minimise gaseous and particulate pollutant emissions from construction activities as far as feasible and reasonable; and,
- Identify and control potential dust and air pollutant sources.

1.5 Roles and Responsibilities

An overview of the specific responsibilities for air quality management as they relate to each role on the project is outlined in Table 1 below:

Table 1 Roles and Responsibilities

Activity	Responsibility
Development and implementation of Site plans Responsibility for implementation of the CEMP and this Air Quality Management Procedure	**Project Director** **Construction Managers** **Environment and Planning Manager**
Environmental monitoring and visual inspections of mitigation measures Implementing mitigation measures Recording and reporting of effectiveness of mitigation measures Weekly look ahead of expected weather patterns	**Environmental Coordinator**
Daily weather monitoring Implementation of mitigation measures Inspection of mitigation measures Recording implementation of mitigation measures	**Site Foreman** **Environmental Coordinator**
The management, action and discharge of any complaints received in accordance with the process as outlined in the CCS and BMP	**Community Relations Manager**

1.6 Requirements Specific to Air Quality

The following air quality requirements specific to this project have been extracted from the CEMF, Revised Environmental Mitigation Measures (REMMs) and Conditions of Approval (CoA) as below:

Table 2.1 Relevant CEMF requirements

CEMF reference	Requirement
16.1	Air Quality Management Objectives
	a. The following air quality management objectives will apply to construction:
	i. Minimise gaseous and particulate pollutant emissions from construction activities as far as feasible and reasonable; and
	ii. Identify and control potential dust and air pollutant sources.
16.2	Air Quality Management Implementation
	a. Principal Contractors will develop and implement an Air Quality Management Plan which will include, as a minimum:
	i. The air quality mitigation measures as detailed in the environmental approval documentation;
	ii. The requirements of any applicable EPL conditions;
	iii. Site plans or maps indicating locations of sensitive receivers and key air quality / dust controls;
	iv. The responsibilities of key project personnel with respect to the implementation of the plan;
	v. Air quality and dust monitoring requirements; and
	vi. Compliance record generation and management.
	b. Air quality and dust monitoring will involve the following as a minimum:
	i. Meteorological conditions will be monitored and appropriate responses will be organised and undertaken periodically by the Principal Contractor;
	ii. Regular visual monitoring of dust generation from work zones; and

CEMF reference	Requirement
	iii. Monitoring emissions from plant and construction vehicles to ensure they have appropriate emission controls and are being maintained correctly.
	c. The following compliance records will be kept by the Principal Contractor:
	i. Records of any meteorological condition monitoring;
	ii. Records of any management measures implemented as a result of adverse, windy weather conditions; and
	iii. Records of air quality and dust inspections undertaken.
16.3	Air Quality Mitigation
	a. Examples of air quality mitigation measures include:
	i. Plant and equipment will be serviced and maintained in good working order to reduce unnecessary emissions from exhaust fumes;
	ii. Water suppression will be used for active earthwork areas, stockpiles, unsurfaced haul roads and loads of soil being transported to reduce wind-blown dust emissions;
	iii. Wheel-wash facilities or rumble grids will be provided and used near the site exit points, as appropriate; and
	iv. Dust extraction and filtration systems will be installed for tunnel excavation works and deep excavation with limited surface exposure.

Table 2.2 Relevant REMMs requirements

REMMs Reference	Requirement
AQ1	The engines of all on-site vehicles and plant would be switched off when not in use for an extended period.
AQ2	Plant would be well maintained and serviced to minimise emissions. Emissions from plant would be considered as part of pre-acceptance checks.
AQ3	Construction site layout and placement of plant would consider air quality impacts to nearby receivers.
AQ4	Hard surfaces would be installed on long term haul routes and regularly cleaned.
AQ5	Unsurfaced haul routes and work area would be regularly damped down in dry and windy conditions.
AQ6	All vehicles carrying loose or potentially dusty material to or from the site would be fully covered.
AQ7	Stockpiles would be managed to minimise dust generation.

Table 2.3 Relevant CoA requirements

CoA Reference	Requirement
E5	In addition to the performance outcomes, commitments and mitigation measures specified in PIR, all reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during the construction and operation of the CSSI.

1.7 Key Risk Activities to Air Quality

Air quality is largely affected by any construction activities with the potential to generate dust in combination with wind and dry weather. The environmental risk assessment included in Appendix I of the CEMP identified the following activities:

- Trenching and backfilling;
- Stockpiling of soil;
- Concrete cutting and demolition;

- Vehicles tracking soil;
- Blockwork and drywall cutting;
- Topsoil, compost, and organics; and,
- Diesel powered plant and vehicle emissions too can contribute to poor air quality.

1.8 Mitigation Measures

The following mitigation measures will be implemented during construction to minimise the risk of adverse air quality and dust impacts as outlined in the CEMF and REMMs:

- Plant and equipment will be serviced in good working order to reduce unnecessary emissions from exhaust fumes;
- Emissions from plant will be considered as part of pre-acceptance checks;
- Water suppression will be used for active earthwork areas, stockpiles, unsurfaced haul roads and loads of soil being transported to reduce wind-blown dust emissions;
- Wheel-wash facilities or rumble grids will be provided and used near the site exit points where appropriate;
- Construction Site layout and placement will consider air quality impacts to nearby receivers;
- All vehicles carrying loose or potentially dusty material to or from the site will be fully covered;
- Stockpiles will be managed to minimise dust generation including being covered when not used for longer than seven (7) days, or during dry and windy conditions;
- Vehicles and plant being used on site will be switched off when not in use for an extended period;
- The construction hoarding and site compound will be inspected regularly, and dust build up cleaned off when required;
- Water will be used during saw-cutting activities likely to generate dust; and,
- Gaseous plant and equipment used for construction, including the on-site water treatment plant (WTP) will be correctly stored, monitored and maintained to prevent the accidental release of gas.

1.9 Monitoring

Monitoring activities, as outlined in Table 3, will be implemented during construction to minimise adverse impacts resultant from dust and emissions:

Table 3 Monitoring Activities

Monitoring Activities	Frequency
Visual inspections for air borne dust being generated on, and leaving the site, dust settling on hoardings and in the local vicinity to the project	**Daily**
Weather conditions being experienced on site (focusing on those which are likely to adversely impact dust and emissions such as hot weather, windy conditions)	**Daily**
Weather conditions expected to be experienced on site (focusing on those likely to increase the risk of dust propagation (dry, hot and windy conditions, bushfires, etc)	**Weekly look ahead in advance on construction activities**
Construction activities will be monitored to confirm that dust mitigation measures are in place and functioning correctly (wheel wash facilities, water trucks, misters, and the like)	**Daily**

Where monitoring identifies visible dust leaving the Site, the construction activities causing the dust will be ceased immediately and an inspection carried out by the Environmental Coordinator and Site Manager to agree corrective actions to be implemented. The Site Manager will be responsible for ensuring actions are implemented prior to construction activities recommencing.

1.10 Record Management

Records will be maintained by the project Environmental Co-ordinator, as follows:

- Inspections of dust and air quality on site undertaken;
- Corrective actions raised and close out;
- Records of weather patterns throughout construction;
- Records of implementation measures used; and,
- Acceptance records for plant and equipment being used on the Site.