

Remediation of Hickson Road, Part of EPA Remediation Site 21122, Barangaroo Central (SSD 6617)



Further Response to Submissions, May 2016

Privileged and Confidential

Appendix A: Summary of Submissions and Responses to Issues Raised in Submissions

Issue no.	Key Issues Summary	Lendlease Response
Department of Planning and Environment – Hazards Units		
1	Proposed consent conditions providing for: ▪ Pre-construction: - Hazard and Operability Study - Final Hazard Analysis ▪ Pre-commissioning - Emergency Plan - Safety Management System	As the recommended consent conditions should relate to the in-situ works only (the ex-situ works do not present significant hazards that trigger the need for a Preliminary Hazard Analysis), the proposed conditions should be adjusted to reflect that the Hazard and Operability Study, Final Hazard Analysis, Emergency Plan and Safety Management System are only required if the in-situ method is selected.
NSW Department of Primary Industries		
2	DPI Water requests ongoing monitoring of the groundwater system at the eastern edge of the Barangaroo site associated with Hickson Road and this should be incorporated into the GMP. The GMP should be prepared in consultation with DPI Water.	The proposed monitoring can be incorporated into the Groundwater Monitoring Plan (GMP) being prepared for the in-situ remediation works (if selected), as required by the Remedial Action Plan. The monitoring would continue for the duration required by the Remedial Action Plan.
NSW Environmental Protection Authority		
<i>Air Quality Impact Assessment (AQIA)</i>		
3	In-situ option: In-Stack VOCs Any suitable monitoring data collected during the Hickson Road remediation trial should be utilised to support the final design for the project and the	Noted. Results from the Trial will be used to support final design and EPL limits/conditions for full-scale in-situ remediation for the project.

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	establishment of EPL limits and conditions.	
4	In-situ option: compliance with the Clean Air Regulation The EPA considers that the project could be designed to meet minimum requirements set by the <i>Protection of the Environment Operations (Clean Air) Regulation 2010</i>. Final EPL limits will be established upon confirmation of the final design arrangements.	Noted.
5	Ex-situ option: The EPA notes that some of the initial construction activities conducted outside the control enclosures may generate odours (i.e. excavation of areas for containment walls). The proponent should adopt all feasible and reasonable control measures for these activities, with the objective of minimising air emissions.	Noted.
6	The revised AQIA includes predicted Ground Level Concentrations (GLC) that differ from the AQIA provided during public exhibition. While the EPA noted that some of the changes are minor and may not be significant, the EPA noted that no detailed information or discussion has been presented within the revised AQIA to rationalise the changes in predicted ground level concentrations	Information in Section 5.5.6 of the amended AQIA mentions that predicted impacts from Stage 1C works were modelled at each receiver, which reduced cumulative levels at receivers. Previously in the original AQIA the maximum level from the Stage 1C works were added to all receivers - a conservative approach resulting in higher modelled air quality levels. The amended AQIA was updated to factor in detailed results from the Stage 1C report, to be more representative of potential impacts at relevant receivers.
<i>Contaminants and Risk</i>		
7	The EIS lacks detailed project design information and states that further details will be provided for EPA review and comment. The EPA notes that further assessment of impacts may be required if the project design plans change significantly to those presented in the EIS.	The information provided is suitable for assessment of the development application. Further details will be available following design development prior to the issue of a construction certificate. It is noted that any significant change will require a modification or new application to be made.

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8	An Asbestos Management Plan and appropriate Environment Management and Safety Plan/s must be developed and implemented for the project. The Project Asbestos Management Plan must include appropriate best practice control strategies and measures to prevent or minimise the generation of asbestos emissions.	Noted. In terms of document nomenclature, it is proposed to prepare an Asbestos Management Plan and a Health Management Plan, for consistency with the plans already prepared as required by previous development consents.
9	The development and implementation of a comprehensive and detailed air quality management plan (AQMP) for all project works is required to ensure and demonstrate all proposed strategies and controls are appropriately designed and effectively implemented. Specific issues that must be considered and addressed in the AQMP are provided below.	Noted.
10	To be included in AQMP Offsite treatment, transport and disposal of excavated material has the potential to be significant sources of emissions and consequently represent a significant risk with respect to adverse air impacts if the applicable strategies, processes and controls are not properly assessed, designed and implemented. The EPA recommends that the proponent demonstrates that contingencies are in place: ▪ That can be applied if onsite contaminated material storage is required, to ensure project works are not reliant on Block 4 and 5 works. ▪ In the event the treatment and/or disposal of highly contaminated materials from Hickson Road is not, or cannot, be undertaken in an environmentally acceptable manner.	If on-site contaminated material storage is required, the material will be stored and managed on-site in accordance with the Soil and Water Impact Assessment (EIS Appendix O) and a future Spoil and Waste Management Sub-Plan (to be issued to EPA for review). If off-site waste treatment and/or disposal facilities are temporarily unavailable there are a number of practical contingency options available to ensure any excavated hazardous waste is managed appropriately: ▪ temporarily stockpile in the excavation enclosure on Hickson Road, and/or ▪ temporarily stockpile in the excavation enclosure on Block 4/5, and/or ▪ slow down or temporarily cease works. The required actions will be undertaken to ensure that the works comply with waste legislation and regulations at all times.
11	To be included in AQMP Details of the management of liquid wastes.	Noted.

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12	To be included in AQMP The EPA recommends that the proponent include the requirement in the project AQMP for the foam suppressant to be trialled and tested at the site, to demonstrate it is effective and can be reliably applied, prior to its general use.	The use of Rusmar is based on its specifications and experience at other gasworks remediation sites in Australia. Rusmar has been included in management plans and Remedial Works Plan for the separate Block 4 remediation works (Perimeter Retention Wall) which have been reviewed by the EPA, and Rusmar is currently being used on the Block 4 site to manage odours from gasworks waste. It is reasonable to propose a consistent approach to odour management for this DA. This issue is covered by existing obligations under the EPL 13336, legislation and regulations, which require the works to not emit odour beyond the boundary of the premises. A trial was not required by the Block 4 or 5 development consent. The conditions of consent applied to this project should be consistent with those applied to previous remediation development consents at Barangaroo. On this basis a trial is not considered to be warranted for this material and a condition to this effect would be considered to be unreasonable.
15	To be included in AQMP The EPA recommends that appropriate robust control strategies and measures for mitigation of air emissions during or following delivery of contaminated materials at treatment or disposal facilities be included in the project AQMP or related management plans, and effectively implemented.	Noted. The proposed control strategies have already been outlined in the application.
	The EPA recommends that the proponent develops and implements a comprehensive asbestos management plan for the project.	Noted. Any condition of consent in this regard should be consistent with those that apply to the Block 4 and Block 5 Remediation DAs.
16	To be included in AQMP Details of the odour control for works outside of enclosures (including management of soil generated outside enclosures) should be incorporated in the project AQMP.	Noted.

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17	To be included in AQMP Details of the soil vapour extraction (SVE) should be incorporated in the project AQMP. The SVE system must be appropriately designed and operated to ensure emissions generated during in-situ chemical oxidation works are appropriately captured and controlled.	Noted.
18	To be included in AQMP Odour mitigation capture efficiency analysis: The EPA recommends that the proponent incorporate performance testing in its program of stack emissions tests to demonstrate, to the extent practicable, that for VOC emissions in particular, the filter efficiencies match or are superior to those assumed.	As per the previous RtS response, the amended AQIA (6.1.2), recommends that odour sampling be undertaken to demonstrate compliance with modelling rather than performance testing to demonstrate reduction efficiencies, given the reliance of the modelling on odour concentration rather than reduction efficiency. This is consistent with the approach being taken for the separate Block 4 and Block 5 remediation works. The program of stack testing in the amended AQIA (6.5) is considered adequate to demonstrate that there are no impacts from the stack emissions.
19	To be included in AQMP The EPA notes that the proposed VOC monitoring must be demonstrated to be fit for purpose. Consequently it must be designed to ensure the implemented emission controls are working effectively at all times. Details of the proposed VOC monitoring should be included in the project AQMP.	Noted.
20	To be included in AQMP The EPA recommends that the project AQMP include ambient vapour monitoring consistent with the objectives of the HIA.	Noted.
21	To be included in AQMP The final detailed Environmental Management and Safety plans should include all potential hazardous and emergency scenarios based on the methodologies selected.	Noted. In terms of document nomenclature, it is proposed to prepare an Asbestos Management Plan and a Health Management Plan, for consistency with the plans already prepared as required by previous development consents.

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22	The EPA notes the revised AQIA does not appear to include elevated receptors at occupied buildings associated with Stage 1a of the Barangaroo Project. The proponent should clarify whether these receptors have been appropriately considered.	AECOM have confirmed that elevated receptors have been appropriately considered. The emissions largely do not have vertical momentum and produce ground based plumes. Ground level receptors tend to have highest impacts. Impacts at lower level receptors were not predicted, and accordingly impacts on elevated receptors are considered unlikely. The maximum modelled level remains at 38 Hickson Road.
24	The EPA recommends that the proponent clarify and justify the assumption that only half of the Odour Control Structure area will actively emit odour at any time.	This assumption is based on the sizing of the enclosure within Hickson Road, and the requirement for other works and ancillary activities (such as parking, deliveries, materials handling, waste classification) to occur inside the enclosure, which will limit the maximum area that can be excavated within the enclosure at any one time.
25	The EPA notes that the before filtration total emission rate data for PM10, TSP and VOCs in Table 25 [of the revised AQIA] appear to be incorrect, based on the data presented in the Stage 1C remediation and earthworks EIS. The EPA recommends that the proponent clarify that the before filtration total emission rates used to model the OCS stack emissions for Block 4 PM10, TSP and combustion VOCs are correct.	AECOM have confirmed that the before filtration total emission rates used to model the OCS stack emissions for Block 4 PM10, TSP and combustion VOCs within the amended Hickson Road remediation AQIA are correct.
26	The EPA notes that the AQIA does not appear to contain the emission estimates for Stage 1C works alone, rather cumulative concentrations including emissions from Stage 1 C works. The EPA recommends that the proponent provide details clarifying the emission estimates used for Stage 1C works.	As per the amended Hickson Road remediation AQIA (section 5.5.6), the emissions estimates are contained in the Wilkinson Murray 2015 report. We consider that they do not need to be reproduced in the amended AQIA. The emissions estimates are contained in Section 6.4 and Appendix C of the Stage 1C AQIA.
<i>EPA's Recommended Conditions of Approvals – General Conditions</i>		
27	Prior to construction and commencement of operations, the proponent must submit an Air Quality Design Verification Assessment to the NSW EPA to establish EPL limits and conditions. The Verification Assessment must: Be conducted in strict accordance with the <i>Approved Methods for the</i>	Noted. This is as per previous development consents. The required assessment should be referred to as an 'Air Quality Verification Report' to be consistent with previous Barangaroo remediation development consents. It should contain similar content

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	<i>Modelling and Assessment of Air Pollutants in NSW;</i> ▪ Assess all key compounds in relation to the contaminated area and particulate matter; ▪ Outline final design arrangements and discharge parameters; ▪ Be supported by data available from other-remediation trials or projects where considered suitable to the project. For example the Hickson road - remediation trial; and ▪ Include appropriate trigger levels, monitoring methods and actions for detection of activated carbon breakthrough.	to that in the Block 4 (B13) and Block 5 (B11) consents.
28	Prior to commencement of project operations, the proponent must prepare and implement an Air Quality and Odour Management Plan. The plan must include the following: a. the implementation of best available control technology and best environmental practice to ensure emissions are being reduced to the maximum extent achievable for all air pollutant generating activities; b. mitigation methods, management strategies and contingencies as determined following contractor selection :and final Project design; c. an ambient air monitoring program and reactive management strategy, including real-time meteorological monitoring, continuous particulate and VOC monitoring for management purposes, fit for purpose odour monitoring, and the implementation of appropriate triggers to further develop the reactive management strategy for air pollution mitigation; and d. details of all proposed air quality emission control measures including: - timeframe for implementation of all identified emission controls; - key performance indicator(s) for emission sources and controls;	Noted. This is as per previous development consents. The content requirements for the Air Quality & Odour Management Plan should be consistent with previous Barangaroo remediation development consents. It should contain similar content to that in the Block 4 (Condition B14) and Block 5 (Condition B12) consents. In particular, it is requested that this condition be re-worded to require the Air Quality and Odour Management Plan to include the following: a. comprehensive proactive and reactive air quality and odour management strategies for all pollutant emission sources to ensure that the assessment criteria are met during the works; b. key performance indicators for emission controls; c. real time air monitoring program and monitoring methods including location frequency and duration; d. response mechanisms; e. record keeping; f. compliance reporting; and g. management and monitoring strategies and associated responsibilities (for contractors and employees).

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	- monitoring method(s) including location, frequency and duration; - response mechanisms; - responsibilities for demonstrating and reporting achievement of key performance indicator(s); - record keeping and complaints response register; and - compliance reporting.	
29	Any generator must meet, as minimum, the emission performance standards prescribed by the <i>Protection of the Environment Operations (Clean Air) Regulation 2010</i> .	This condition is not required, as the construction works will always need to meet the <i>Protection of the Environment Operations (Clean Air) Regulation 2010</i> .
30-	Point source discharges associated with the remediation activities must: ▪ Be fitted with appropriate emission control systems; ▪ Be monitored continuously for Volatile Organic Compounds (VOCs). The monitoring must be conducted in accordance with <i>Approved Methods for Sampling and Analysis of Air Pollutants in NSW</i>.	This condition is not required, as it is already covered in the requirements above for an Air Quality Verification Report' and an Air Quality and Odour Management Plan.
31	Prior to commencement of project operations, the proponent must prepare and implement an asbestos management plan for the Project.	Noted. The condition should reflect similar content to the requirements for an Asbestos Management Plan in the Block 4 (B22) and Block 5 (B18) consents.
32	Prior to commencement of project operations, the proponent must prepare and implement environmental management and safety (EMS) plans for the project. These plans must include all potential hazardous and emergency scenarios based on the methodologies selected.	Noted. The condition should reflect similar content to the requirements for a Health Management Plan in the Block 4 (B17) and Block 5 (B17) consents.
<i>EPA's Recommended Conditions of Approvals – Ex-Situ Remediation Option</i>		
33	All excavation and loading of contaminated soils must be undertaken inside enclosure(s) fitted with suitable ventilation arrangements and pollution control equipment.	This proposed condition does not account for works outside enclosures as described in the amended Hickson Road Remediation AQIA (section 3.3.7). Suggest for consistency that this is reworded to:

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		<i>'Excavation and loading of contaminated odorous spoil must be undertaken inside odour control enclosure(s) fitted with suitable ventilation arrangements and pollution control equipment as per the Air Quality & Odour Management Plan', except for the following:</i> ▪ <i>Site mobilisation and shallow services investigation/diversion.</i> ▪ <i>Installation of groundwater control walls.</i> ▪ <i>Installation of retaining walls to separate the excavation stages.</i> Alternately, the approach taken in the Block 4 and Block 5 development consents could be used to allow both excavation within and outside the excavation enclosures.
34	The odour control enclosure(s) must be designed, maintained and operated under negative pressure at all times.	Noted.
35	Contaminated material must be stored within the odour control enclosure(s), or an equivalent level of control (such as sealed containers) at all times.	Suggest for consistency that this is reworded to: <i>'Contaminated odorous material must be stored within odour control enclosure(s), or an equivalent level of control at all times'.</i>
36	During transportation offsite, all contaminated or odorous spoil must be appropriately sealed to minimise air emissions, to the maximum extent practical.	Suggest for consistency that this is reworded to: <i>'During transportation offsite, all contaminated odorous spoil must be appropriately sealed to minimise air emissions, to the extent practical'.</i>
NSW Health		
37	Lendlease has not provided a response to the issues raised in NSW Health's original submission. These issues related to the provision of monitoring data and project status information to NSW Health, and notification of NSW Health in the event of a public health emergency.	Lendlease has no objection to the application of any of the conditions previously requested by NSW Health, and reiterated in the most recent submission.

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Port Authority of NSW		
38	Going forward, we would like to specifically note Lend Lease's commitment to consult with Port Authority of NSW in respect to any proposed traffic changes on Hickson Road which may impact on traffic flows and access on Hickson Road.	Noted.
Transport for NSW		
39	Construction Pedestrian and Traffic Management Plan (CPTMP) TfNSW requests that the applicant be conditioned to prepare a CPTMP in consultation with the CBD Coordination Office within TfNSW and RMS. The CPTMP needs to specify, but not be limited to, the following: ▪ Location of the proposed work zone; ▪ Location of the crane; ▪ Haulage routes; ▪ Construction vehicle access arrangements; ▪ Proposed construction hours; ▪ Estimated number of construction vehicle movements; ▪ Construction program; ▪ Consultation strategy for liaison with surrounding stakeholders; ▪ Any potential impacts to general traffic, cyclists, pedestrians and bus services within the vicinity of the site from construction vehicles during the construction of the proposed works; ▪ Cumulative construction impacts of projects including Sydney Light Rail Project. Existing CPTMPs for developments within or around the development site should be referenced in the CPTMP to ensure that coordination of work activities are managed to minimise impacts on the CBD road network; and	For consistency with condition B16 of the Block 5 remediation development consent, it is requested that CPTMP condition be re-worded to include the following measures: a. minimise the impact of the development on the safety and capacity of the surrounding road network, bus operation, pedestrian and cyclist safety; specifically considering multiple construction projects at Barangaroo and Wynyard and including the construction of Wynyard Walk and Barangaroo Ferry Wharf; b. minimise truck movements to and from the site as far as practicable during peak periods; c. ensure traffic, public transport, pedestrian and cyclist facilities are accessible at all times or appropriate alternatives are proposed where facilities cannot be made accessible during construction; d. ensure appropriate accessibility for emergency access and egress; and e. ensure impacts from the new signalised intersection of Sussex, Hickson and Napoleon along with any new signals on Hickson Road are appropriately managed.

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	Should any impacts be identified, the duration of the impacts and measures proposed to mitigate any associated general traffic, public transport, pedestrian and cyclist impacts should be clearly identified and included in the CPTMP. Submit a copy of the final plan to the Coordinator General, CBD Coordination Office for approval, prior to the commencement of any work.	
40	Road Occupancy Licences Road Occupancy Licences must be obtained from the Transport Management Centre (TMC) for any activities likely to impact on the operational efficiency of the road network.	Lendlease has no objection to TfNSW's requirements.
41	TfNSW requests that the proponent consult with the CBD Coordination Office within TfNSW in relation to the above issues.	Lendlease has no objection to TfNSW's requirements.
Residents Submission		
42	We understand that standards in relation to noise measuring do not usually take into account the tonal characteristics of noise where they include prominent tones that increase the perceptibility of a noise. The response from Wilkinson Murray has made no allowance for this. The use of certain equipment, especially generators or self-powered lighting on the site has been the source of significant sleep deprivation for us. As the site is in close proximity to our building we can take no real comfort from the response provided in relation to "Low Frequency Noise". We would appreciate that NSW Department of Planning and Environment further seek to ensure the preservation of our night time amenity.	Noted. A Noise & Vibration Management Plan will be prepared that will include continuous noise monitoring, and actions for responding to any exceedances. It will include measures to manage noise emissions from the works, including night-time works, with acoustic treatment of plant to achieve the relevant noise management levels.