DETERMINATION OF A DEVELOPMENT APPLICATION
FOR STATE SIGNIFICANT AND DESIGNATED DEVELOPMENT
UNDER SECTION 80 OF THE
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

I, the Minister for Infrastructure and Planning, pursuant to sections 80(4) and 80(5) of the *Environmental Planning and Assessment Act 1979*, determine the development application referred to in Schedule 1 by granting staged development consent subject to the conditions set out in Schedule 2.

The reason for the imposition of conditions is to:

a) minimise any adverse environmental impacts associated with the development;
b) provide a framework for strategic planning of dredging works, with phased dredging and disposal of materials at facilities or locations lawfully able to accept those materials; and
c) provide a framework for trial remediation of contaminated sediments, with the option to continue remediation if the trial is successful.

Frank Sartor MP
Minister for Planning

Sydney, 9 August, 2005 File No. S01/00533

MOD 1 – MOD-27-2-2006-i Approved 28 February 2006
MOD 2 – MOD-65-7-2007-i Approved 23 September 2007
MOD 3 – MOD-17-5-2008-i Approved 8 July 2008
MOD 4 – MOD 4 (DA-134-3-2003-i) Approved 8 August 2009
MOD 5 – MOD 5 (DA-134-3-2003-i) Approved 31 July 2009
MOD 7 – MOD 7 (DA-134-3-2003-i) Approved 18 February 2010
MOD 8 – MOD 8 (DA-134-3-2003-i) Approved 18 March 2013

SCHEDULE 1

Application made by:	NSW Waterways Authority (trading as NSW Maritime)
To:	Minister for Infrastructure and Planning
In respect of:	Lot 12 Lot 20 DP262325, Lot 36 DP775776, Lots 1, 6 and 7 DP1015754, Lot 122 DP874949, Lot 222 DP1013964, Lots 31, 32 and 33 DP 1116571 (formerly Lot 3 DP1032755) and Crown Land above and below the high water mark along the South Arm of the Hunter River being Reserve 1011268 and Reserve 56146.
For the following:	Extension of shipping channels within the Port of Newcastle, including dredging, excavation, treatment and disposal of sediments from the south arm of the Hunter River

Development Application:	Development Application DA-134-3-2003-i, lodged with the Department on 31 March 2003, accompanied by *Proposed Extension of Shipping Channels, Port of Newcastle: Environmental Impact Statement* (five volumes), prepared by GHD Pty Ltd and dated November 2003;
State Significant Development	Under Section 76A(7) of the Act, the development is classified as State Significant development by virtue of clause 11 of *State Environmental Planning Policy No. 55 – Remediation of Land*. The development is a category 1 remediation work, being designated development, and is to be undertaken on a remediation site, being land the subject of a declaration under Division 3, Part 3 of the *Contaminated Land Management Act 1997* (declaration number 21022).
Appeal Rights	If the Applicant is dissatisfied with this determination, section 97 of the *Environmental Planning and Assessment Act 1979* grants it a right of appeal to the Land and Environment Court, which is exercisable within 12 months of receiving notice of this determination. If an objector is dissatisfied with this determination, section 98 of the Act grants him, her or it a right of appeal to the Land and Environment Court, which is exercisable within 28 days of receiving notice of this determination.
Commencement of Consent	Pursuant to section 83 of the *Environmental Planning and Assessment Act 1979*, this consent does not operate until 28 days after the Applicant has been notified of the determination of the development application, or from the determination of an appeal made to the Land and Environment Court under section 97 or 98 of the *Environmental Planning and Assessment Act 1979*, whichever is the later, unless the determination of such an appeal is to refuse development consent.
Lapse of Consent	Pursuant to section 95 of the *Environmental Planning and Assessment Act 1979*, this development consent is liable to lapse five years after the date from which it operates unless the use of any land, building or work the subject of the consent is actually commenced before the date on which the consent would otherwise lapse.

KEY TO CONDITIONS

SCHEDULE 2

In this consent, except in so far as the context or subject-matter otherwise indicates or requires, the following terms have the meanings indicated:

Act	*Environmental Planning and Assessment Act 1979*
Applicant	NSW Maritime Authority
Department	Department of Planning and Infrastructure
development	the development to which this consent applies
Director-General	Director-General of the NSW Department of Planning and Infrastructure, or nominee
DPI	NSW Department of Primary Industries
dust	any solid material that may become suspended in air
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence issued under the *Protection of the Environment Operations Act 1997*
Minister	Minister for Planning and Infrastructure, or nominee
OEH	NSW Office of Environment and Heritage
publicly available	available for inspection by a member of the general public (for example available on an internet site or at a display centre).
RMS	NSW Roads and Maritime Services
site	the land to which this consent applies, including both dry-land and wet-land components of the site

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SUBSCHEDULE A
SCOPE OF DEVELOPMENT WORKS AND GENERAL PROVISIONS

A1. GENERAL
Scope of Development

A1.1 The development shall be carried out generally in accordance with:

a) Development Application DA-134-3-2003-i, lodged with the Department on 31 March 2003;

b) *Proposed Extension of Shipping Channels, Port of Newcastle: Environmental Impact Statement* (five volumes), prepared by GHD Pty Ltd and dated November 2003;

c) *Proposed Extension of Shipping Channels, Port of Newcastle: Environmental Impact Statement – Supplementary Report*, prepared by GHD Pty Ltd and dated November 2004;

d) modification application MOD-27-2-2006-i, relating to the extension of trial remediation works;

e) modification application MOD-65-7-2007-i, relating to staging of ecological and water quality monitoring, accompanied by correspondence for the Newcastle Coal Infrastructure Group Pty Ltd to the Department, dated 1 May 2007;

f) modification application MOD-17-5-2008-i, relating to an Optimisation Study, accompanied by:

  i) *Supplementary Report to Accompany BHP Billiton's Application to Modify DA-134-3-2003-i: Optimisation Study for the Hunter River Remediation Project*, prepared by CH2M HILL Australia Pty Ltd and dated March 2008; and

  ii) additional information provided by email dated 17 June 2008, relating generally to odour issues, complaints handling and site layout;

g) modification application DA-134-3-2003-i MOD 5, relating to the installation of a permanent onshore sheet pile wall and accompanied by:

  i) *Statement of Environmental Effects for Onshore Sheet Pile Wall,* prepared by ENSR Australia Pty Ltd and dated 28 May 2009; and

  ii) additional information provided by email dated 1 July 2009, relating generally to contamination, water quality, excavated material and waste issues;

h) modification application DA-134-3-2003-i MOD 4, relating to progression to Stage 2 of the development and accompanied by *Environmental Assessment: BHP Billiton's Hunter River Remediation Project: Application for Approval to Proceed to Stage 2* (two volumes), prepared by ENSR Australia Pty Ltd and dated 19 December 2008;

i) modification application DA-134-3-2003-i MOD 8, relating to the relocation and expansion of the swing basin and accompanied by:

  i. *Extension of Shipping Channels, Port of Newcastle Section 75W Modification Statement of Environmental Effects* dated June 2011; and

  ii. *Extension of Shipping Channels, Port of Newcastle Section 75W Modification Response to Submissions* report dated June 2012; and

j) the conditions of this consent.

A1.2 In the event of an inconsistency between:

a) the conditions of this consent and any document listed from condition A1.1(a) to A1.1(i) inclusive, the conditions of this consent shall prevail to the extent of the inconsistency; and

b) any document listed from condition A1.1(a) to A1.1(i) inclusive, the most recent document shall prevail to the extent of the inconsistency.

A1.3 To avoid any doubt, this consent permits dredging and excavation works as generally described in *Proposed Extension of Shipping Channels, Port of Newcastle:*

Environmental Impact Statement (five volumes), prepared by GHD Pty Ltd and dated November 2003, including channel dredging, all berth boxes and swing basin components.

Statutory Requirements

A1.4 All licences, permits and approvals shall be obtained and maintained as required throughout each phase of the development. No condition of this consent removes the obligation to obtain, renew or comply with such licences, permits or approvals.

A2. STAGING AND TIMING OF WORKS

Staging of Development

A2.1 Pursuant to sections 80(4) and 80(5) of the *Environmental Planning and Assessment Act 1979*, the development shall be undertaken in stages, as follows:

a) Stage 1A comprising all dredging works of clean and contaminated materials, and transfer of those materials off-site for treatment and/or disposal;

b) Stage 1B comprising all works associated with the remediation of up to 6500m3 of contaminated material from Stage 1A, including handling and transfer of treated materials off-site for further treatment and/ or disposal; and

c) Stage 2 comprising all works associated with remediation of contaminated materials from Stage 1A not the subject of Stage 1B works.

A2.1A To avoid any doubt, the Optimisation Study as defined in the document referred to under condition A1.1f) of this consent forms part of Stage 1B of the development.

A2.1B The Optimisation Study referred to in the document under condition A1.1f) of this consent may include trials, testing, optimisation and related activities for cement stabilisation and/ or bioremediation methods, subject to such works and activities meeting the requirements of this consent. Details of all such works and activities shall be provided as part of the Optimisation Study Program required under condition C1.3A.

A2.2 Stage 2 works shall be subject to further approval, as follows:

a) where Stage 1B works are successful in achieving the remediation outcomes specified under this consent, the Minister's approval may be sought to continue Stage 1B works as Stage 2, without the need for a new modification or development application under the *Environmental Planning and Assessment Act 1979*;

b) where Stage 1B works are successful in achieving the remediation outcomes specified under this consent, but require minor modification(s) prior to implementation as Stage 2, the Minister's approval may be sought to continue Stage 1B works as Stage 2 concurrently with lodgement of a modification application under the *Environmental Planning and Assessment Act 1979* for the Minister's determination; or

c) where Stage 1B works are unsuccessful in achieving remediation outcomes specified under this consent, or require substantial changes before implementation as Stage 2, a new development application under the *Environmental Planning and Assessment Act 1979* shall be lodged for the Minister's determination.

A2.3 In seeking the Minister's approval to continue Stage 1B works as Stage 2 under condition A2.2a) of this consent, the following matters must be demonstrated to the Minister's satisfaction:

a) all conditions of this consent applicable to remediation works have been complied with and will continue to be complied with during Stage 2;

b) the Stage 1B works can be applied without change to the achievement of remediation outcomes during Stage 2, including demonstration that the remediation works will not require expansion beyond the physical footprint of the Stage 1B works;

c) all mitigation, management and monitoring measures applied to the Stage 1B works have been updated to reflect application to Stage 2;
d) the EPA has been consulted in relation to continuation of Stage 1B works as Stage 2, and that the EPA is satisfied with the application of Stage 1B works to Stage 2.

A2.4 In seeking the Minister's approval to continue Stage 1B works, with minor modification(s) as Stage 2 under condition A2.2b) of this consent, the following matters must be demonstrated to the Minister's satisfaction:
a) how the Stage 1B works and relevant conditions of this consent are to be modified to achieve acceptable remediation outcomes during modified application to Stage 2;
b) the modified Stage 1B works can be applied to the achievement of remediation outcomes during Stage 2, including demonstration that the modified remediation works will not require expansion beyond the physical footprint of the Stage 1B works; and
c) the EPA has been consulted in relation to continuation of modified Stage 1B works as Stage 2, and that the EPA is satisfied with the application of modified Stage 1B works to Stage 2.

A2.5 If, under condition A2.2c), a development application is lodged with and approved by the Minister for a substantial modification in remediation approach between Stage 1B and Stage 2, sub-schedule C of this consent shall cease to operate and this consent shall cease to permit any remediation works from the date of operation of the new development consent granted Minister.

Note: to avoid any doubt, this development consent in itself does not authorise the application of thermal desorption technology for the remediation of contaminated sediments. Should thermal desorption be proposed as the preferred remediation approach for Stage 2, separate development consent would be required.

Application of Consent to Development Stages

A2.6 Stage 1A of the development shall be undertaken in accordance with the conditions specified in Sub-Schedule A (general conditions) and Sub-Schedule B (dredging-specific conditions) of this consent.

A2.7 Stage 1B of the development shall be undertaken in accordance with the conditions specified in Sub-Schedule A (general conditions) and Sub-Schedule C (remediation-specific conditions) of this consent.

A2.8 Stage 2 of the development shall be undertaken in accordance with the conditions specified in Sub-Schedule A (general conditions) and Sub-Schedule D (full-scale remediation conditions) of this consent.

Timing of Development Stages

A2.9 Subject to compliance with the relevant conditions of this consent applicable prior to the commencement of Stage 1A and Stage 1B respectively, Stage 1A and Stage 1B may commence from the date of operation of this consent.

A2.10 Stage 2 shall not commence until the relevant approval from the Minister is obtained under condition A2.2, and that approval commences to operate.

A3. COMMUNITY INFORMATION, CONSULTATION AND INVOLVEMENT

A3.1 Subject to confidentiality, all documents required under this consent shall be made available for public inspection on request.

Complaints Procedure

A3.2 Prior to the commencement of any works the subject of this development consent, the following shall be established and made available for community complaints:

a) a telephone number, available to receive complaints on a 24-hour basis, on which complaints about the development may be registered;
b) a postal address to which written complaints may be sent; and
c) an email address to which electronic complaints may be transmitted.

The telephone number, the postal address and the email address shall be advertised on at least one occasion prior to the commencement of any works on the site, by a printed notice which is legible from a public place or road. These details shall also be provided on the relevant internet site(s), should one exist. The above means shall continue to be made available for community complaints during each phase of the development until conclusion of all works permitted by this development consent, unless otherwise agreed by the Director-General. This condition does not apply during periods of inactivity between phases of the development, in which no works are being undertaken under this consent for an extended period.

A3.3 Details of all complaints received through the means listed under condition A3.2 of this consent shall be recorded in an up-to-date Complaints Register. The Register shall record, but not necessarily be limited to:

a) the date and time, where relevant, of the complaint;
b) the means by which the complaint was made (telephone, mail or email);
c) any personal details of the complainant that were provided, or if no details were provided, a note to that effect;
d) the nature of the complaint;
e) any action(s) taken in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken in relation to the complaint, the reason(s) why no action was taken.

The Complaints Register shall be made available for inspection by the EPA and the Director-General upon request. Summaries of the Register, without details of the complainants, shall also be made available to the public for inspection upon request.

A3.4 Prior to the commencement of any works on the site, the parties undertaking the dredging and the remediation works shall cooperatively develop and submit for the approval of the Director-General, a **Complaints Handling and Response Protocol**, detailing how public complaints will be managed and addressed in an appropriate and timely manner. The Protocol shall be implemented from the commencement of any works the subject of this consent and shall specifically focus on:

a) procedures and processes for the receipt of complaints, with specific reference to the requirements listed under condition A3.2 of this consent;
b) details of how complaints will be handled and responded to in a timely manner;
c) procedures and processes for management and maintenance of the Complaints Register required under condition A3.3 of this consent;
d) management and reporting structures and responsibilities in relating to complaints handling and response;
e) specific procedures to be followed in the event of many or recurrent complaints;
f) procedures for review of the effectiveness of complaints handling and response mechanisms; and

g) mechanisms and procedures for coordinating responses to community inquiries and complaints between the parties undertaking dredging and remediation works.

A4. COORDINATION OF DREDGING AND REMEDIATION WORKS

A4.1 The Applicant may seek the Director-General's approval to prepare and submit any management plan or monitoring program required under this development on a staged or progressive basis. Where a management plan or monitoring program is required before the carrying out of any development phase or stage, the plans/ programs may be prepared and submitted in relation to either discrete components or for a specified time period.

A4.2 In the event that the development the subject of this consent is to be undertaken by more than one party, the Applicant shall develop a program to track and coordinate compliance with the conditions of this consent. The program shall clearly identify the responsibilities of each party with respect to each relevant condition of consent, and indicate how the Applicant will ensure consistent and coordinated approaches to development works and compliance with this consent. The program shall also clearly indicate how the preparation and submission of any staged or progressive management plans and monitoring programs will be coordinated and managed. The Applicant shall provide a copy of the program to the Director-General and the EPA by 31 December 2007, unless otherwise agreed by the Director-General. Updated copies of the program shall be submitted to the Director-General and the EPA if amendments are made to the program from time to time.

SUBSCHEDULE B
CONDITIONS RELATING TO DREDGING WORKS

B1. DREDGING GENERAL REQUIREMENTS

Application of Sub-Schedule

B1.1 The conditions in this sub-schedule of the consent relate to:

a) all dredging activities and associated works;
b) all works within the Hunter River and connected bodies of water; and
c) the handling, management and transport of clean and contaminated materials to locations lawfully permitted to accept the materials (but not necessarily the subsequent transport of treated or untreated materials from the initial point of delivery).

B1.2 To avoid any doubt, the conditions in this sub-schedule of the consent must be complied with by the Applicant, or any party undertaking the activities and works referred to under condition B1.1.

Strategic Planning of Dredging Works

B1.3 Prior to the commencement of any dredging or excavation works, other than those works associated with dredging and supply of materials for Stage 1B (refer to condition A2.1), a **Strategic Dredging Program** shall be developed and implemented to provide a framework for strategic planning of dredging works. The Program shall include, but need not be limited to:

a) a phased work program for undertaking all dredging and excavation works, with timeframes for each phase of the works;
b) a schedule of quantities of materials to be dredged or excavated during each phase of the works, including details of the quality of the materials in the context of likely disposal/ reuse routes (i.e. clean fill, off-shore disposal, landfill disposal or remediation treatment);
c) a schedule of identified potential destinations for materials from each phase of the works, with details of required approvals for each destination, including development consents, environment protection licences and landowners' approvals; and
d) a strategic program to ensure planning for and delivery of the necessary approvals referred to under c), for each of the phase and material combination under a) and b).

The Program shall be kept up-to-date and shall reflect the changing strategic direction of dredging works that may occur from time to time, in response to the need to deliver Port berthing opportunities or in response to the availability of treatment and disposal opportunities for dredged materials.

B1.4 Prior to the commencement of each phase of dredging works identified under the Strategic Dredging Program required under condition B1.3 of this consent, the following matters must be demonstrated to the satisfaction of the Director-General:

a) all relevant regulatory approvals have been obtained in relation to the facility or location to which the dredged materials for the particular phase are to be directed, including but not necessarily limited to development consent and an environment protection licence, where relevant;
b) an agreement to accept dredged materials has been established with the owner and/or operator of the facility or location to which the dredged materials for the particular phase are to be directed; and
c) a detailed Traffic Management Program for the particular phase has been submitted to and approved by the RMS in accordance with condition B2.29.

Commencement of each phase of the dredging works shall not commence until written confirmation has been received from the Director-General that this condition has been complied with in relation to the particular phase.

Compliance Certification

B1.5 Prior to each of the events listed from a) to d) below, or within such period otherwise agreed by the Director-General, documentation certifying that all conditions of this consent applicable prior to that event have been complied with shall be submitted to the satisfaction of the Director-General. Where an event is to be undertaken in stages, submission of compliance certification may be staged consistent with the staging of activities relating to that event, subject to the prior agreement of the Director-General.

a) commencement of dredging works to obtain materials Stage 1B (refer to condition A2.1);
b) commencement of each phase of dredging works established under the program required under condition B1.3;
c) commencement of excavation works associated with the Swing Basin; and
d) completion of dredging and excavation works.

B1.6 Notwithstanding condition B1.5 of this consent, the Director-General may require an update report on compliance with all, or any part, of the conditions of this consent. Any such update shall meet the requirements of the Director-General and be submitted within such period as the Director-General may agree.

B2. DREDGING ENVIRONMENTAL PERFORMANCE

Contaminated Material Dredging Requirements

B2.1 All contaminated materials in the bed of, or associated with, the Hunter River in the Principal and Secondary Contaminated Areas meeting or exceeding either of the criteria listed below shall be dredged or otherwise removed for off-site treatment and/ or disposal. The Principal Contaminated Area is defined under condition B2.3, and may be modified by condition B2.4. The Secondary Contaminated Area is defined under conditions B2.5 and B2.6. The remediation criteria under this condition are:

a) a total polycyclic aromatic hydrocarbon (PAH) concentration of 75mgkg^{-1}, normalised to 1% total organic carbon (TOC), when sampled in accordance with *Contaminated Sites: Sampling Design Guidelines* (EPA, 1995), or as otherwise agreed by the EPA, and analysed using a methodology acceptable to the EPA; or
b) a 95% upper confidence limit (UCL) of the mean total polycyclic aromatic hydrocarbon (PAH) concentration of 15mgkg^{-1}, when sampled in accordance with *Contaminated Sites: Sampling Design Guidelines* (EPA, 1995), or as otherwise agreed by the EPA, and analysed using a methodology acceptable to the EPA.

B2.2 Nothing in this consent relieves the obligation to remove materials meeting or exceeding the criteria specified under condition B2.1 of this consent, if testing data, or interpolation or extrapolation of that data, indicates that materials outside the Principal Contaminated Area and the Secondary Contaminated Area meet or exceed those criteria.

Principal Contaminated Area

B2.3 For the purpose of condition B2.1 of this consent, the Principal Contaminated Area is defined as that area within the coordinates in ISG 56/1 projection listed in Table 1 below.

Table 1 - Definition of Principal Contaminated Area

Boundary Point	Easting	Northing
1	370412.073	1359744.851
2	370450.241	1359767.198
3	370461.326	1359773.764
4	370476.643	1359777.236
5	370509.466	1359773.893
6	370522.281	1359767.832
7	370577.115	1359724.752
8	370602.920	1359697.771
9	370617.208	1359.679.895
10	370615.546	1359663.625
11	370619.496	1359655.545
12	370635.164	1359642.805
13	370656.665	1359630.166
14	370683.274	1359620.216
15	370711.226	1359612.417
16	370719.020	1359611.611
17	370747.510	1359616.182
18	370779.317	1359623.386
19	370798.587	1359622.836
20	370806.957	1359620.280
21	370816.046	1359615.107
22	370822.863	1359609.171
23	370830.030	1359600.785
24	370832.441	1359596.820
25	370859.049	1359552.718
26	370870.175	1359542.094
27	370884.689	1359533.488
28	370941.668	1359513.858
29	370958.535	1359506.426
30	370966.303	1359500.323
31	370970.451	1359494.898
32	370975.802	1359483.011
33	370978.758	1359474.137
34	370986.015	1359452.893
35	370992.197	1359444.557
36	370999.722	1359439.178
37	371011.548	1359435.951
38	371026.705	1359435.51
39	371048.207	1359438.910
40	371072.665	1359445.095
41	371100.349	1359451.817
42	371127.043	1359456.830
43	371144.365	1359456.109
44	371156.962	1359451.672
45	371166.136	1359444.106
46	371168.248	1359436.904
47	371166.565	1359428.699
48	371152.221	1359403.682
49	371149.425	1359398.409
50	371147.812	1359392.762

51	371148.081	1359385.501
52	371156.413	1359377.165
53	371289.104	1359260.345
54	371368.848	1359189.968
55	371378.523	1359182.170
56	371383.776	1359180.750
57	371389.079	1359175.271
58	371394.704	1359164.503
59	371395.276	1359156.328
60	371394.124	1359150.117
61	371381.494	1359083.945

B2.4 The EPA may with written notice alter the coordinates of the Principal Contaminated Area referred to under condition B2.3, to reduce or expand the Area, in light of any data obtained under this consent or further analysis of existing data, to reflect the spatial extent of contaminated materials meeting or exceeding the criteria specified under condition B2.1.

Secondary Contaminated Area

B2.5 For the purpose of condition B2.1 of this consent, the Secondary Contaminated Area is defined as that area within the coordinates in ISG 56/1 projection listed in Table 2 below.

Table 2 - Definition of Secondary Contaminated Area

Boundary Point	Easting	Northing
1	371384.031	1359180.487
2	371425.370	1359262.915
3	371193.952	1359488.996
4	371167.057	1359431.097
5	371166.565	1359428.699
6	371152.221	1359403.682
7	371149.425	1359398.409
8	371147.812	1359392.762
9	371148.081	1359385.501
10	371156.413	1359377.165
11	371289.104	1359260.345
12	371368.848	1359189.968
13	371378.523	1359182.170
14	371383.776	1359180.750
15	371384.031	1359180.487

B2.6 Materials within the Secondary Contaminated Area defined under condition B2.5 shall be sampled and tested at a spatial resolution, depth, and with a methodology acceptable to the EPA, to determine the distribution and concentration of total poly-cyclic aromatic hydrocarbons (PAH) for the purpose of assessment against the criteria specified under condition B2.1 of this consent. All materials identified as meeting or exceeding those criteria shall be dredged or otherwise removed as required by condition B2.1.

Air Quality Impacts

Odour

B2.7 The development shall be undertaken so as not to permit any offensive odour, as defined under section 129 of the *Protection of the Environment Operations Act 1997*, to be emitted beyond the boundary of the site.

B2.8 The total exposed area of treated and untreated contaminated materials from both remediation and dredging activities combined, shall not exceed 2,500 m^2 at any time, unless otherwise agreed to in writing by the EPA.

B2.9 Where the party undertaking dredging works is not the same party undertaking remediation works under this consent, the two parties shall develop and implement a protocol to coordinate works to achieve the requirements of condition B2.8 of this consent.

Dust Emissions

B2.10 All activities shall be undertaken in a manner that minimises or prevents dust emissions from the site, including wind-blown and traffic-generated dust. All activities undertaken on the site shall be undertaken with the objective of preventing visible emissions of dust from the site. Should such visible dust emissions occur at any time, all practicable dust mitigation measures, including cessation of relevant works, as appropriate, shall be identified and implemented such that emissions of visible dust cease.

B2.11 All trafficable and vehicle manoeuvring areas shall be maintained at all times in a condition that minimises the generation and emission of dust.

B2.12 All vehicles entering, leaving or on the site and carrying a load, which has the potential to generate dust, must be covered or otherwise enclosed at all times to minimise the generation and emission of dust. This condition does not apply during loading and unloading.

Soil and Water Quality Impacts

B2.13 Except as may be expressly permitted by a licence under the *Protection of the Environment Operations Act 1997* in relation to the development, section 120 of that Act (prohibition of the pollution of waters) shall be complied with in connection to the development.

B2.14 The development shall be undertaken in a manner that does not cause turbidity in the Hunter River, outside the silt curtain or temporary sheet pile wall installed as part of the development, to exceed trigger levels established in consultation with the EPA following analysis of baseline data. Water quality measurements shall be undertaken in accordance with the Water Quality Monitoring Program required under condition B3.2.

B2.15 Surface water and stormwater shall be managed to ensure that run-off generated from disturbed areas is segregated from any water that is actually or potentially contaminated as a result of activities associated with the development. Surface water and stormwater from undisturbed areas shall be managed in accordance with *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004).

B2.16 All plant and equipment employed during the dredging and associated works shall be thoroughly cleaned of all clean and contaminated materials prior to the removal of that plant and equipment from the site, to minimise the uncontrolled transfer of materials off the site.

Management of Onshore Sheet Pile Works

B2.16A The silt curtains to be placed around the onshore sheet pile wall construction zone shall be designed, installed and maintained throughout the duration of construction of this wall to achieve the following outcomes:

a) prevent the release of contaminants and visible plumes of sediment;

b) prevent any visible turbid plume and visible sheen extending beyond the silt curtain; and

c) prevent any visible sheen extending beyond the silt curtain and boom.

Management of Dredging Works

B2.17 All dredging activities within the Principal Contaminated Area referred to under condition B2.3 of this consent and any dredging activities involving materials otherwise known or suspected to meet or exceed the remediation criteria specified under condition B2.1, shall only be undertaken within a sheet piled wall, or other barrier wall acceptable to the EPA. This condition does not apply in relation to removal of the 1000m^3 of contaminated materials to supply the trial remediation (refer to condition C1.3).

B2.18 A silt curtain with boom shall be designed, installed and maintained outside the barrier referred to under condition B2.17 for the duration of installation, operation and removal of the barrier wall and until turbidity in the water column within the silt curtain has fallen to less than 10 percent above the background turbidity in the Hunter River (refer to condition B2.14). Silt curtains are to be designed, installed and maintained to prevent the release of a visible plume of sediment beyond the silt curtain.

B2.19 A silt curtain with boom shall be designed, installed and maintained around all works associated with the removal of 1000m^3 of contaminated materials to supply the trial remediation (refer to conditions C1.3 and). Silt curtains are to be designed, installed and maintained to prevent the release of a visible plume of sediment beyond the silt curtain.

B2.20 The barrier wall referred to under condition B2.17 shall be designed, installed and maintained to prevent mixing of sediments between contaminated dredging areas and the Hunter River.

B2.21 The barrier wall referred to under condition B2.17 shall be maintained until a demonstration has been made to the satisfaction of the EPA that all materials within the barrier wall meeting or exceeding the remediation criteria under condition B2.1 have been removed and turbidity within the water column within the barrier wall has fallen to less than 10 percent above the background turbidity in the Hunter River (refer to condition B2.14).

B2.22 An inspection program shall be prepared and implemented to ensure that all sediment barriers, including barrier wall(s), silt curtain(s) and associated boom(s) are maintained with respect to structural integrity and effectiveness. The program shall include procedures to record dates, times and observations made with each inspection, and to maintain those records up-to-date at the site office or other central environmental management location relevant to the dredging works. The program and resultant records shall be made available to the Director-General and the EPA upon request.

B2.23 Prior to the commencement of any dredging works, a response plan shall be developed and implemented for the containment, clean-up and removal of any oil-spills and other oil releases that may occur as the result of dredging and associated activities.

Management of Swing Basin Works

B2.24 The Swing Basin embankment that separates the waters of the Hunter River from the excavation pit made in constructing the Swing Basin shall not be removed until it has been demonstrated to the satisfaction of the EPA that:

a) sampling of the basal sediments within the excavation pit has demonstrated that this material is able to be reused or disposed at a facility or location lawfully able to accept it; and

b) the discharge of any waters that may collect in the Swing Basin excavation pit will meet the objectives of *Australian and New Zealand Water Quality Guidelines 2000* (ANZECC, 2000).

Stockpile Management

B2.25 All contaminated materials shall be stored in an impervious bunded area(s) with sufficient volume to accommodate the materials and any leachate and contaminated water than may be generated from those materials alone and through storm events.

B2.26 The swing basin shall be constructed using sheet pile walls and tie backs. Any utility and/or service impacted by the construction of the basin shall be relocated at the expense of the Proponent unless an alternate arrangement acceptable to the utility/service provider is agreed to prior to the commencement of construction activities.

The wind turbine is permitted to be demolished with the prior approval of Ausgrid or the relevant utility/service provider. All costs associated with demolition shall be borne by the Proponent, unless an alternate arrangement acceptable to the utility/service provider is agreed to prior to the commencement of construction activities.

B2.27 Except as may be expressly provided under an Environment Protection Licence for the development, the Applicant shall ensure that the discharge of any supernatant and run-off water from stockpiles, handling and placement areas complies with section 120 of the *Protection of the Environment Operations Act 1997*, which prohibits the pollution of waters.

Traffic, Transport and Infrastructure Impacts

Protection of Tourle Street Bridge

B2.28 Prior to the commencement of any dredging or excavation works within 100 metres of the existing or proposed new alignment of Tourle Street Bridge, a detailed structural integrity assessment shall be undertaken in consultation with the RMS. The assessment shall be undertaken by an independent, qualified structural/ civil engineer, and shall specifically address the potential for dredging and excavation works to destabilise the existing or proposed new Tourle Street Bridge. Where lateral movement of sediment, or other result of dredging or excavation works is identified as having potential to destabilise the Bridge, the assessment shall specify mitigation options to address this potential, including additional structural works in relation to the Bridge, and/ or modification of the western extent of dredging and excavation works. The assessment shall be undertaken to the satisfaction of the RMS, and shall be submitted to the Director-General prior to the commencement of any dredging or excavation works within 100 metres of the existing or proposed new alignment of Tourle Street Bridge.

Dredged Material Transport Strategy

B2.29 Prior to the commencement of any dredging or excavation works, other than those works associated with dredging and supply of materials for Stage 1B (refer to condition A2.1), a **Dredged Material Transport Strategy** shall be developed and submitted for the approval of the RMS. The Strategy shall be prepared in consultation with the RMS and Newcastle City Council, and shall include, but not necessarily be limited to:

a) a strategic transport plan for the transport of dredged and excavated materials off-site, consistent with phases identified as part of the Strategic Dredging Program required under condition B1.3;
b) identification of the quantities of materials, transport mode and number of traffic movements necessary to remove materials from the dredge/ excavation area(s) relevant to each phase;
c) establishment of a road hierarchy for transport of materials from each phase, having due consideration to destination of materials, road capacity restrictions, peak traffic flows, sensitive road users (including public transport and school-related traffic), and restrictions of the use of B-doubles;

d) establishment of traffic movement scheduling to avoid conflicts with peak traffic flows, sensitive road users and to distribute traffic flows to distribute impacts to the greatest extent reasonably possible;
e) identification and commitment to alternatives to road haulage of materials, including where feasible, conveyance of materials by pipe, rail and sea;
f) identification and commitment to the installation and maintenance of any necessary road safety infrastructure and management measures, with specific reference to intersection management;
g) proactive and reactive measures for traffic monitoring, planning and management over the life of the development; and
h) specific consideration of coordination provisions to avoid concurrent peak impacts associated with dredging and remediation works.

Noise and Vibration Impacts

Restrictions to Hours

B2.30 All activities associated with sheet piling installation and removal, that could potentially exceed the noise and vibration criteria under conditions B2.34 and B2.36, shall only be undertaken within the hours specified below. This condition does not apply in the event of an emergency (to protect the human and biophysical environments) or under direction from a relevant authorised public authority. All sheet piling activities shall be restricted to the following hours:
a) between 09:00 and 17:00 on Mondays to Fridays;
b) between 09:00 and 17:00 on Saturdays; and
c) at no time on Sundays or public holidays.

B2.31 All dry-land activities associated with the excavation of the swing basin shall only be undertaken within the hours specified below. This condition does not apply in the event of an emergency (to protect the human and biophysical environments) or under direction from a relevant authorised public authority. All dry-land activities shall be restricted to the following hours:
a) between 08:00 and 18:00 on Mondays to Fridays;
b) between 08:00 and 18:00 on Saturdays; and
c) at no time on Sundays or public holidays.

B2.32 All activities associated with blasting operations shall only be undertaken within the hours specified below. This condition does not apply in the event of an emergency (to protect the human and biophysical environments) or under direction from a relevant authorised public authority. All blasting operations shall be restricted to the following hours:
a) between 09:00 and 17:00 on Mondays to Fridays;
b) between 09:00 and 17:00 on Saturdays; and
c) at no time on Sundays or public holidays.

B2.33 The time restrictions specified under conditions B2.30, B2.31 and B2.32 of this consent may be varied with the Director-General's agreement with the proposed variation in times, including the results of any community consultation that the Director-General may require to be undertaken, and after considering any information necessary for the Director-General to reasonably determine that activities undertaken during the varied hours will not adversely impact on the acoustic amenity of receptors in the vicinity of the site.

Noise Limits

B2.34 All dredging, excavation and associated works shall be undertaken such that the noise contributed from those works to the background acoustic environment does not exceed the maximum noise contribution limits (as $LA_{eq(15\ minute)}$) specified in Table 3, at the locations indicated, and during the periods specified. The noise limits specified under this condition only apply under the following meteorological conditions:
a) wind speeds up to $3ms^{-1}$ at 10 metres above ground level; or

b) under temperature inversion conditions of up to 3°C per 100 metres and wind speeds up to 2ms^{-1} at 10 metres above ground level.

Table 3 - Maximum Allowable Noise Contributions

Location	Day *07:00 to 18:00 Mondays to Saturdays* *08:00 to 18:00 Sundays/ public holidays*	Evening *18:00 to 22:00 any day*	Night *22:00 to 07:00 Mondays to Saturdays* *22:00 to 08:00 Sundays/ public holidays*
NM1 – 21 Crebert Street, Mayfield	62	58	53
NM2 – 52 Arthur Street, Mayfield	56	55	48
NM3 – 1 Arthur Street, Mayfield	51	51	48
NM4 – Mayfield East Public School	52	50	47
NM5 – Cnr Wye Street and Avon Street, Mayfield	50	50	47
NM6 – 45 Simpson Circuit, Mayfield	51	54	51

B2.35For the purpose of assessment of noise contributions specified under condition B2.34, noise from the development shall be:

a) measured at the most affected point on or within the boundary of the most-affected noise sensitive locations; and

b) subject to the modification factors provided in Section 4 of the *New South Wales Industrial Noise Policy* (EPA, 2000), where applicable.

Notwithstanding, should direct measurement of noise from the development be impractical, an alternative noise assessment method deemed acceptable by the EPA (refer to Section 11 of the *New South Wales Industrial Noise Policy* (EPA, 2000)) may be employed. Details of such an alternative noise assessment method accepted by the EPA shall be submitted to the Director-General prior to the implementation of the assessment method.

Blasting and Vibration Limits

B2.36Overpressure from blasting activities shall not exceed:

a) 115 dB (Lin Peak) for more than 5% of the total number of blasts conducted in any 12-month period; and

b) 120 dB (Lin Peak) at any time.

The overpressure limits specified under this condition apply when measured with equipment having a lower cut-off frequency of 2Hz or less. If the equipment has a higher cut-off frequency than 2Hz, then a correction of 5dB shall be added to the measured value. Equipment with a lower cut-off frequency exceeding 10Hz shall not be used in measuring overpressure for the purposes of this condition.

B2.37Ground vibration peak velocity from blasting activities shall not exceed:

a) 5mms^{-1} for more than 5% of the total number of blasts conducted in any 12-month period; and

b) 10mms^{-1} at any time.

For the purpose of determining compliance with this condition, ground peak particle velocity shall be measured at any point within one metre of the boundary of any

affected residential premises or other noise-sensitive location (such as schools and hospitals).

Impacts on Flora and Fauna

B2.38 Prior to the commencement of any works associated with the development within 50 metres of mangrove areas (as mapped on Figure 5 of Appendix G of the document referred to under condition A1.1b) of this consent), the Applicant shall delineate the limit of development works with flagging tape or other suitable temporary markers to restrict the extent of clearing of mangroves only to those areas required for the development and to minimise the potential for overclearing or accidental damage to surrounding vegetation.

B2.39 Prior to the commencement of any phase of dredging or excavation works that will result in the removal of mangroves, wetland vegetation or saltmarsh communities from the South Arm of the Hunter River, a compensatory habitat package shall be established in consultation with and to the satisfaction of the OEH and DPI. The package shall include one or more of the following compensatory measures:

a) provision of no less than 23 hectares of compensatory habitat, whether new or restored, comprising Coastal Saltmarsh in the NSW North Coast, Sydney Basin and South East Corner Bioregions and Freshwater Wetlands on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions; or

b) equivalent financial contribution to a wetland rehabilitation project in the Lower Hunter Region; or

c) equivalent provision of new or maintained intertidal feeding areas and roosting habitats for waters in the Hunter River Estuary; or

d) any other form of compensatory habitat agreed by the OEH and DPI.

Funding or works associated with the compensatory habitat package shall commence prior to the commencement of any phase of dredging or excavation works, that will result in the removal of mangroves, wetland vegetation or saltmarsh communities. This condition does not apply with respect to dredging to supply materials to Stage 1B (refer to condition A2.1b).

Hazards and Risk Impacts

B2.40 Class 1 dangerous goods, as defined under the Australian Dangerous Goods Code, shall only be brought to the site on an as-needs basis, and stored inventories on the site shall be minimised at all times. Class 1 dangerous goods shall be transported and stored in strict accordance with relevant Australian Standards.

B2.41 All liquid hazardous substances, including but not limited to diesel, lubrication oil and hydraulic fluid shall be stored in an impervious bunded area(s) with volume equivalent to no less than 110% of the largest single container within the bund.

Waste Generation and Management

B2.42 Wastes generated by the development or from outside the site shall not be caused, permitted or allowed to be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence issued under the *Protection of the Environment Operations Act 1997*. This condition only applied to the storage, treatment, processing, reprocessing to disposal of wastes where such a licence is required.

B2.43 All materials removed from the Hunter River and associated areas, as the result of dredging or excavation, including excavation of the Swing Basin, shall be reused, disposed of or treated at a facility or location lawfully able to accept it.

B2.43A Any works associated with the construction of the onshore sheet pile wall must not adversely affect any works or environmental controls that have been or are to be

implemented, as part of the remediation of the 'Closure Area' (Lots 31-33 DP 1116571).

B2.43B Materials excavated from the Closure Area (Lots 31- 33 DP 1116571) and the One Steel site (Lot 222 DP 1013964) associated with the construction of the onshore sheet pile wall shall be managed in accordance with an approved Remediation Action Plan. This requirement is waived should a Site Auditor accredited under the Contaminated Land Management Act 1997 endorse the use of the excavated material management measures (with or without modification) proposed in the documents identified in condition A1.1g as being suitable for the proposed works and in accordance with relevant site and legislative requirements.

Where material is determined to be suitable for storage or reuse on the site, the storage or reuse shall be agreed to by the affected land owner.

B2.43C The disposal of materials off site associated with the construction of the onshore sheet pile wall (including the temporary rock platform) shall be assessed, classified, managed and disposed of in accordance with the *Waste Classification Guidelines* (DECC, 2008). All waste materials removed from the site shall only be directed to a waste management facility lawfully permitted to accept the materials.

Socio-Economic Impacts

B2.44 Prior to the commencement of any dredging or excavation works, other than those works associated with dredging and supply of materials for Stage 1B (refer to condition A2.1), a **Public and Commercial Access Protocol** shall be established in consultation with public and commercial users of the south arm of the Hunter River, including the Newcastle Fisherman's Cooperative. The Protocol shall establish notification, communication and coordination procedures with users of the Hunter River potentially affected by exclusion or restriction resulting from the dredging and excavation works, and mechanisms to resolve conflicts between those parties' activities, should they occur. The Protocol shall include, but not necessarily be limited to the scope and content detailed in section 20.4 of the document referred to under condition A1.1 of this consent.

B3. DREDGING ENVIRONMENTAL MONITORING AND AUDITING

Water Quality Monitoring

B3.1 For the purposes of monitoring turbidity during dredging, excavation and other works within the Hunter River, at least one in-stream representative reference monitoring point up-stream and down-stream of dredging, excavation and other works within the Hunter River shall be identified and established. The monitoring points shall lie up-stream and down-stream of the extent of works identified in Figure C.1 of the document referred to under condition A1.1 of this consent and shall be established prior to the commencement of works within the Hunter River. The EPA and the Director-General shall be notified of the location of the monitoring points prior to the commencement of any works within the Hunter River, and if required by either the EPA or the Director-General, modify the location of the monitoring points to reflect a representative reference location(s).

B3.2 Prior to the commencement of any works within the Hunter River, a **Water Quality Monitoring Program** to monitor turbidity and polycyclic aromatic hydrocarbon (PAH) concentrations in the River and changes to those concentrations as a result of the development shall be developed and submitted for the approval of the EPA and DPI. The Program shall include, but not necessarily be limited to:

a) establishment of water quality criteria, consistent with any requirements of this consent and the Environment Protection Licence for the development, against which the water quality performance of the development within the Hunter River will be assessed;

b) procedures for monitoring of turbidity at the monitoring points established under condition B3.1 of this consent;
c) procedures for monitoring PAH concentrations in the Hunter River as a result of the development;
d) assessment and management processes to establish whether water quality criteria are being exceeded, or are likely to be exceeded as a result of the development; and
e) contingency measures in the event that elevated turbidity or PAH levels are detected, including modification or cessation of the contributing works.

Once the Program is approved, it shall be implemented for the duration of each phase of the works within the Hunter River, and for at least twelve months after the cessation of each phase of those works, unless otherwise agreed by the EPA and DPI.

Odour Monitoring Program

B3.3 Prior to the commencement of any dredging works an **Odour Monitoring Program** shall be developed and implemented, to monitor and assess the odour performance of the dredging works against the assumptions and predictions detailed in the documents referred to under condition A1.1 of this consent. The monitoring shall include specific provisions for the assessment of cumulative odour impacts with remediation activities, and shall provide sufficient information to support continuation of the trial remediation as Stage 2 of the development, as may be relevant.

Groundwater Monitoring Program

B3.4 Prior to the commencement of any works associated with excavation of the Swing Basin, a **Groundwater Monitoring Program** shall be developed and implemented, to identify and monitor groundwater contaminants and to assess the impacts of Swing Basin construction on groundwater hydrology, particularly the migration of groundwater contaminants towards the Hunter River. The Program shall be developed in consultation with the Department and the EPA, and shall include a contingency plan to mitigate identified and predicted adverse contaminated groundwater impacts. The Program shall specifically focus on the effects of the excavation of the Swing Basin and associated works during construction and operation.

Ecosystem Monitoring Program

B3.5 Prior to the commencement of each phase of dredging or excavation works, other than in relation to dredging of materials for the Stage 1B (refer to condition A2.1b)), an **Ecosystem Monitoring Program** shall be developed and implemented. The Program shall be developed in consultation with and to the satisfaction of the OEH and the DPI, and shall include, but not necessarily be limited to:
a) sampling and data collection on at least two occasions prior to the commencement of dredging and excavation works to establish baseline ecological health upstream and downstream of the development, and within the Hunter River estuary;
b) a sampling, data collection and assessment regime to monitor ecological health during the dredging and excavation works, with specific reference to threatened species, migratory bird populations and overall habitat and biodiversity outcomes;
c) identification and establishment of an ecological monitoring network with specific provision for monitoring in the north and south arms of the Hunter River, deep and shallow monitoring and taking into account spatial variability in species types and distribution;
d) criteria against which the health and viability of the Hunter River and estuary ecological health will be assessed, including distribution of mangrove and saltmarsh communities upstream of the development and with the overall Hunter River estuary;

e) water quality monitoring in the context of potential ecological impacts, particularly in relation to salinity, turbidity, temperature and dissolved oxygen;
f) mitigation measures to be implemented in the event that reduced ecological health is identified with reference to established assessment criteria; and
g) monitoring for ecological health and biodiversity outcomes following dredging and excavation activities, and for the recovery of biodiversity within the areas directly and indirectly affected by the development.

The Program shall be continued for at least twelve months following completion of each phase of dredging and excavation works, unless otherwise agreed by the OEH and the DPI.

B4. DREDGING ENVIRONMENTAL MANAGEMENT AND REPORTING

Incident Reporting

B4.1 The Director-General shall be notified of any incident with actual or potential significant off-site impacts on people or the biophysical environment within 24 hours of the Applicant, or other relevant party undertaking the development, becoming aware of the incident. Full written details of the incident shall be provided to the Director-General within seven days of the date on which the incident occurred. The Director-General may require additional measures to be implemented to address the cause or impact of any incident, as it relates to this consent, reported in accordance with this condition, within such period as the Director-General may require.

Environmental Representative

B4.2 Prior to the commencement of each phase of dredging or associated works, a suitably qualified and experienced Environmental Representative(s) shall be nominated to and approved by the Director-General. The Environmental Representative(s) shall be employed for the duration of each phase of the dredging and associated works, or as otherwise agreed by the Director-General. The Environmental Representative shall be:

a) the primary contact point in relation to the environmental performance of the dredging and associated works;
b) responsible for all Management Plans and Monitoring Programs required under this consent, in relation to dredging and associated works;
c) responsible for considering and advising on matters specified in the conditions of this consent, and all other licences and approvals relating to the environmental performance and impacts of the dredging and associated works;
d) responsible for the management of procedures and practices for receiving and responding to complaints and inquiries in relation to the environmental performance of the dredging and associated works;
e) required to facilitate an induction and training program for relevant persons involved with the development (refer to condition B4.3 of this consent); and
f) given the authority and independence to require reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur.

Environmental Training

B4.3 Prior to the commencement of any dredging or associated works an **Environmental Training Program** shall be developed and implemented to establish a framework in which relevant employees will be trained in environmental management and the operation of plant and equipment, including pollution control equipment, where relevant. The Program shall include, but not necessarily be limited to:

a) identification of relevant employment positions associated with the development that have an operational or management role related to environmental performance;

b) details of appropriate training requirements for relevant employees;
c) a program for training relevant employees in operational and/ or management issues associated with environmental performance; and
d) a program to confirm and update environmental training and knowledge during employment of relevant persons.

Dredging Environmental Management Plan

B4.4 Prior to the commencement of each phase of dredging or excavation works, a **Dredging Environmental Management Plan** shall be prepared for that phase and submitted for the approval of the Director-General. The Plan shall outline environmental management practices and procedures to be followed during the particular phase of dredging and excavation works and shall include, but not necessarily be limited to:

a) a description of all activities to be undertaken during dredging, excavation and associated activities;
b) statutory and other obligations that must be fulfilled during dredging, excavation and associated activities, including all approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;
c) a description of the roles and responsibilities for all relevant employees involved in the dredging and excavation works;
d) details of how the environmental performance of the development will be monitored, and what actions will be taken to address identified adverse environmental impacts. In particular, the following environmental performance issues shall be addressed in the Plan:
    i) measures to monitor and manage dust emissions;
    ii) measures to monitor and minimise soil erosion and the discharge of sediment and other pollutants to lands and/ or waters;
    iii) measures to monitor and manage contaminated sediments/ materials;
    iv) measures to monitor and control noise emissions during operation;
    v) measures to monitor and control air emissions during handling of contaminated materials; and
e) the Management Plans listed under condition B4.5 of this consent;
f) arrangements for community consultation and complaints handling procedures during dredging and excavation works.

B4.5 As part of the Dredging Environmental Management Plan required under condition B4.4 of this consent, the following Management Plans shall be prepared and implemented:

a) an **Odour Management Plan** to outline measures to minimise odour impacts associated with the dredging and excavation works. The Plan shall include, but not necessarily be limited to:
    i) identification of all point and diffuse sources of odour associated with the dredging and excavation works;
    ii) a detailed description of the odour mitigation methods and management practices that will be used throughout the dredging and excavation works to ensure offensive odour impacts do not occur off site;
    iii) details of the implementation of best practice management measures to ensure potential odour impacts are managed;
    iv) a detailed description of the methods used for monitoring the effectiveness of the odour mitigation methods and management practices for all point and diffuse sources of odour associated with the dredging and excavation works;
    v) details of proposed contingency measures should odour impacts occur;
    vi) a procedure for handling potential odour complaints that includes recording, investigating, reporting and follow-up action; and

vii) processes and procedures for coordination with the party undertaking remediation works to ensure a consistent and coordinated approach to project-specific and cumulative odour impacts.

b) a **Soil and Water Management Plan** to outline measures that will be employed to manage surface water and groundwater, to minimise soil erosion and the discharge of sediments and other pollutants to lands and/ or waters for the duration of dredging and excavation work. The Plan shall include, but not necessarily be limited to:

i) consideration of all reasonable options to avoid discharge to ground and/or ambient waters including methods to minimise the volume of contaminated water and effluent generated, recycling and reusing water and effluent (eg. covering excavated material and stockpiles, diversion of 'clean' water away from contaminated areas, etc);

ii) identification of clean and dirty water areas on site maps for different stages of the development;

iii) identification of criteria for nomination of areas as clean or dirty;

iv) details of water management measures to be implemented for clean and dirty waters;

v) details of the remedial actions to be taken by site operators in response to an exceedence of concentration limits or other performance criteria for water management controls, including:

- procedures and contingency actions associated with the installation, operation and removal of the temporary sheet piled wall, silt curtains and booms;
- contingency actions for flood, heavy rainfall and storm-surges into dredging and excavation areas or damage to sheet piled walls, silt curtains or booms; and
- contingency actions for failure of any sediment controls.

vi) identification of management responses to activities that could cause soil erosion or result in the discharge of sediments and/or other pollutants;

vii) specification of performance criteria for erosion, sediment, and pollution control measures (eg. parameters, testing frequency, duration and location and test methods); and

viii) actions and measures to be implemented to control sediments, and how they will be monitored during the works, clearly indicating who will conduct the monitoring, how the results of this monitoring will be recorded; and, if any non-compliance is detected, what corrective action will be taken.

c) an **Acid Sulfate Soil Management Plan** to detail measures to be implemented in relation to the management and handling of any potential or actual acid sulfate soils on the site. The Plan shall be prepared in accordance with guidance provided in *Acid Sulfate Soil Manual* (Acid Sulfate Soil Management Advisory Committee, 1998).

SUBSCHEDULE C
CONDITIONS RELATING TO REMEDIATION AND OPTIMISATION WORKS

C1. REMEDIATION GENERAL REQUIREMENTS

Application of Sub-Schedule

C1.1 The conditions in this sub-schedule of the consent relate to remediation of contaminated materials on land identified as "Hunter River Sediment Treatment Pilot Study Sites" in Figure 6.1 of the document referred to under condition A1.1 consent.

C1.2 To avoid any doubt, the conditions in this sub-schedule of the consent must be complied with by the Applicant, or any party undertaking the activities and works referred to under condition C1.1.

C1.2A The conditions in this Sub-Schedule apply to works associated with the trial remediation and optimisation study (as defined under conditions C1.3 and C1.3A). Stage 2 works (full-scale remediation activities) are subject to the conditions in Sub-Schedule A and Sub-Schedule D.

Scope of Remediation Works

C1.3 This consent permits the trial remediation of no more than 2,000m^3 of contaminated materials, dredged or otherwise obtained in accordance with this consent, unless and until continuation of the remediation is approved by the Minister in accordance with condition A2.2 of this consent.

C1.3A Notwithstanding condition C1.3 of this consent, an additional 4,500 m^3 of contaminated materials may be removed from the Hunter River for the purpose of an Optimisation Study. Any such Optimisation Study shall be undertaken in accordance with an Optimisation Study Program, developed in consultation with the EPA, and approved by the Director-General prior to removal of the contaminated materials from the River. The Program shall clearly specify the aims of the Optimisation Study and a program of works to achieve those aims, including, but not necessarily limited to:

a) identification of information requirements specified under this consent, and as may be specified by the EPA, necessary for demonstrating acceptable remediation outcomes sufficient for informing any application to proceed to Stage 2 of the development;

b) strategies for testing and treating sediments to achieve the most reliable stabilisation outcomes for the range of contaminant concentrations and physical/ chemical properties of sediments likely to be encountered; and

c) details of how the requirements for an immobilisation approval (as described in Waste Classification Guidelines Part 2: Immobilisation of Waste (DECC, 2008) and Immobilisation Technical Note 2: Cement-based Solidification/ Stabilisation Treatment of Organic Chemical Contaminants in Waste (DECC, 2008), or as otherwise agreed by the EPA will be satisfied through the Optimisation Study.

C1.4 All works associated with the remediation of contaminated materials shall be carried out in a manner that does not cause contamination of existing capped or other ground surfaces. The Proponent shall minimise disturbance to, and cross-contamination of, the existing capped and other ground surfaces, and shall promptly reinstate all affected areas to pre-disturbance condition, or other condition agreed by the EPA and the landowner. Where remediation works occur, the Proponent shall minimise the potential for ingress of any water through the underlying subgrade soils by installing a surface layer with a maximum as-constructed permeability of 10^{-9} ms^{-1} over and above the existing capping/ ground surface layer. The additional layer shall be of adequate

durability and thickness to withstand traffic and equipment movements where these occur as part of the remediation works.

C1.4A The Proponent shall engage a Site Auditor, accredited under the *Contaminated Land Management Act 1997*, to confirm the adequacy of the additional surface layer required under condition C1.4 following its installation.

Completion of Trial and Continuation of Works

C1.5 Within six months of the completion of the Optimisation Study (refer to condition C1.3A of this consent), or within such period as otherwise agreed by the Director-General, a report shall be submitted to the Director-General and the DEC assessing the success of the trial remediation and the ability of remediation works to continue for treatment of remaining contaminated materials to be removed from the Hunter River. The report shall include, but need not be limited to:

a) an assessment of the trial remediation against the predictions detailed in the documents listed under condition A1.1 his consent;
b) an assessment of the trial remediation against the requirements of this consent, with details of any non-compliances and how these were addressed or will be addressed;
c) a detailed assessment of the performance of mixing equipment, with particular focus on the demonstrated ability of the mixing equipment to uniformly mix additives with contaminated materials;
d) a detailed assessment of the suitability of the treated materials for uses proposed in the documents listed under condition A1.1 of this consent, and any other uses for the treated materials that may be identified during the course of the trial remediation;
e) a detailed assessment of odour monitoring conducted during the trial remediation (refer to condition C3.3), including in relation to handling, treatment and trial placement activities. The assessment shall be undertaken with reference to the odour assumptions and predictions detailed in documents listed under condition A1.1 of this consent;
f) details of any alterations that may be necessary to physical aspects or management measures applied to the trial remediation before implementation of the remediation approach to Stage 2 of the development, as may be relevant.

C1.6 The report referred to under condition C1.5 shall form the basis of the Minister's considerations under condition A2.2, in addition to any further information or clarification of information that may be required by the Minister in this regard.

Compliance Certification

C1.7 Prior to each of the events listed from a) to c) below, or within such period otherwise agreed by the Director-General, documentation certifying that all conditions of this consent applicable prior to that event have been complied with shall be submitted to the satisfaction of the Director-General. Where an event is to be undertaken in stages, submission of compliance certification may be staged consistent with the staging of activities relating to that event, subject to the prior agreement of the Director-General.

a) receipt of materials for the trial remediation (refer to condition A2.1);
b) commencement of the trial remediation; and
c) completion of the trial remediation.

C1.8 Notwithstanding condition C1.7 of this consent, the Director-General may require an update report on compliance with all, or any part, of the conditions of this consent. Any such update shall meet the requirements of the Director-General and be submitted within such period as the Director-General may agree.

C2. REMEDIATION ENVIRONMENTAL PERFORMANCE

Air Quality Impacts

Odour

C2.1 The development shall be undertaken so as not to permit any offensive odour, as defined under section 129 of the *Protection of the Environment Operations Act 1997*, to be emitted beyond the boundary of the site.

C2.2 The total exposed area of treated and untreated contaminated materials from both remediation and dredging activities combined, shall not exceed 2,500 m^2 at any time, unless otherwise agreed to in writing by the EPA.

C2.3 Where the party undertaking dredging works is not the same party undertaking remediation works under this consent, the two parties shall develop and implement a protocol to coordinate works to achieve the requirements of condition C2.2 of this consent.

Dust Emissions

C2.4 All activities shall be undertaken in a manner that minimises or prevents dust emissions from the site, including wind-blown and traffic-generated dust. All activities undertaken on the site shall be undertaken with the objective of preventing visible emissions of dust from the site. Should such visible dust emissions occur at any time, all practicable dust mitigation measures, including cessation of relevant works, as appropriate, shall be identified and implanted such that emissions of visible dust cease.

C2.5 All trafficable and vehicle manoeuvring areas shall be maintained at all times in a condition that minimises the generation and emission of dust.

C2.6 All vehicles entering, leaving or on the site and carrying a load, which has the potential to generate dust, must be covered or otherwise enclosed at all times to minimise the generation and emission of dust. This condition does not apply during loading and unloading.

Soil and Water Quality Impacts

C2.7 Except as may be expressly permitted by a licence under the *Protection of the Environment Operations Act 1997* in relation to the development, section 120 of that Act (prohibition of the pollution of waters) shall be complied with in connection to the development.

C2.8 Surface water and stormwater shall be managed to ensure that run-off generated from disturbed areas is segregated from any water that is actually or potentially contaminated as a result of activities associated with the development. Surface water and stormwater from undisturbed areas shall be managed in accordance with *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004).

C2.9 All plant and equipment employed during the dredging and associated works shall be thoroughly cleaned of all clean and contaminated materials prior to the removal of that plant and equipment from the site.

Trial Placements of Treated Materials

C2.10 All trial placements of treated materials associated with the trial remediation referred to under condition C1.3 shall be undertaken on an impervious surface, bunded to exclude the influx of water from uncontaminated areas and to ensure collection of all leachate and drainage from the trial placements, unless otherwise approved by the EPA.

C2.11 All water collected from the impervious bunded areas referred to under condition C2.10 of this consent, and any other contaminated water generated through the trial placement process, shall be disposed off-site at a facility or location lawfully able to receive it.

Stockpile Management

C2.12 Unless otherwise approved by the EPA, treated and untreated contaminated materials shall be stored in an impervious bunded area(s) with sufficient volume to accommodate the materials and any leachate and contaminated water than may be generated from those materials alone and through storm events.

C2.13 Deleted.

C2.14 All supernatant and runoff water from stockpiles, treatment, handling and placement areas shall only be discharge from the site following a demonstration to the satisfaction of the DEC that the discharge of those waters will meet the objectives of *Australian and New Zealand Water Quality Guidelines 2000* (ANZECC, 2000).

Noise Impacts

Restrictions to Hours

C2.15 All activities associated with the remediation of contaminated materials, including handling of contaminated and treated materials shall only be undertaken within the hours specified below. This condition does not apply in the event of an emergency (to protect the human and biophysical environments) or under direction from a relevant authorised public authority. All remediation activities shall be restricted to the following hours:

a) between 07:00 and 18:00 on Mondays to Fridays;
b) between 08:00 and 13:00 on Saturdays; and
c) at no time on Sundays or public holidays.

C2.16 The time restrictions specified under condition C2.15 of this consent may be varied with the Director-General's agreement with the proposed variation in times, including the results of any community consultation that the Director-General may require to be undertaken, and after considering any information necessary for the Director-General to reasonably determine that activities undertaken during the varied hours will not adversely impact on the acoustic amenity of receptors in the vicinity of the site.

Noise Limits

C2.17 All remediation activities and associated works shall be undertaken such that the noise contributed from those activities and works to the background acoustic environment does not exceed the maximum noise contribution limits (as $LA_{eq(15\ minute)}$) specified in Table 4, at the locations indicated, and during the periods specified. The noise limits specified under this condition only apply under the following meteorological conditions:

a) wind speeds up to $3ms^{-1}$ at 10 metres above ground level; or
b) under temperature inversion conditions of up to $3^{o}C$ per 100 metres and wind speeds up to $2ms^{-1}$ at 10 metres above ground level.

Table 4 - Maximum Allowable Noise Contributions

Location	Day *07:00 to 18:00 Mondays to Saturdays* *08:00 to 18:00 Sundays/ public holidays*	Evening *18:00 to 22:00 any day*	Night *22:00 to 07:00 Mondays to Saturdays* *22:00 to 08:00 Sundays/ public holidays*
NM1 – 21 Crebert Street, Mayfield	62	58	53

NM2 – 52 Arthur Street, Mayfield	56	55	48
NM3 – 1 Arthur Street, Mayfield	51	51	48
NM4 – Mayfield East Public School	52	50	47
NM5 – Cnr Wye Street and Avon Street, Mayfield	50	50	47
NM6 – 45 Simpson Circuit, Mayfield	51	54	51

C2.18 For the purpose of assessment of noise contributions specified under condition C2.17 , noise from the development shall be:

a) measured at the most affected point on or within the boundary of the most-affected noise sensitive locations; and

b) subject to the modification factors provided in Section 4 of the *New South Wales Industrial Noise Policy* (EPA, 2000), where applicable.

Notwithstanding, should direct measurement of noise from the development be impractical, an alternative noise assessment method deemed acceptable by the EPA (refer to Section 11 of the *New South Wales Industrial Noise Policy* (EPA, 2000)) may be employed. Details of such an alternative noise assessment method accepted by the EPA shall be submitted to the Director-General prior to the implementation of the assessment method.

Traffic and Transport Impacts

Treated Material Transport Strategy

C2.19 Prior to the commencement of any treatment of contaminated materials, other than those works associated with Stage 1B (refer to condition A2.1), a **Treated Material Transport Strategy** shall be developed and submitted for the approval of the RMS. The Strategy shall be prepared in consultation with the RMS and Newcastle City Council, and shall include, but not necessarily be limited to:

a) a strategic transport plan for the transport of treated materials off-site;

b) identification of the quantities of materials, transport mode and number of traffic movements necessary to remove materials from the treatment site;

c) establishment of a road hierarchy for transport of materials from each phase, having due consideration to destination of materials, road capacity restrictions, peak traffic flows, sensitive road users (including public transport and school-related traffic), and restrictions of the use of B-doubles;

d) establishment of traffic movement scheduling to avoid conflicts with peak traffic flows, sensitive road users and to distribute traffic flows to distribute impacts to the greatest extent reasonably possible;

e) identification and commitment to alternatives to road haulage of materials, including where feasible, conveyance of materials by pipe, rail and sea;

f) identification and commitment to the installation and maintenance of any necessary road safety infrastructure and management measures, with specific reference to intersection management;

g) proactive and reactive measures for traffic monitoring, planning and management over the life of the development; and

h) specific consideration of coordination provisions to avoid concurrent peak impacts associated with dredging and remediation works.

Waste Generation and Management

C2.20 Wastes generated by the development or from outside the site shall not be caused, permitted or allowed to be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence issued under the *Protection of the Environment Operations Act 1997*. This condition only applied to the storage, treatment, processing, reprocessing to disposal of wastes where such a licence is required.

C2.21 Within twelve months of the completion of the Optimisation Study (refer to condition C1.3A, including validation testing of sediment samples, or as otherwise agreed by the EPA, all sediments brought to the site, whether treated or untreated, shall be reused or disposed at a facility or location lawfully able to accept it.

C.2.21A In the event that an appropriate off-site facility or location does not exist or is not identified for the lawful disposal or reuse of treated and/ or untreated materials at the completion of the Optimisation Study, as required under condition C2.21 of this consent, the Proponent shall containerise or otherwise store in a manner agreed by the EPA at an off-site location, the treated and/ or untreated materials. Containerised or otherwise stored materials shall be securely located to meet the requirements of the EPA.

Hazards and Risk Impacts

C2.22 All liquid hazardous substances, including but not limited to diesel, lubrication oil and hydraulic fluid shall be stored in an impervious bunded area(s) with volume equivalent to no less than 110% of the largest single container within the bund.

C3. REMEDIATION ENVIRONMENTAL MONITORING AND AUDITING

Monitoring of Plant and Equipment

C3.1 For the duration of trial remediation activities, quantitative testing shall be conducted in relation to the effectiveness of mixing equipment to uniformly mix additives with contaminated materials (for example, using a chemical or physical tracer). Testing shall be conducted across the full range of sediment particle size compositions, contaminant concentrations and additive proportions used during the trial remediation. The results of this testing shall be included in the report required under condition C1.5.

Treated Materials Monitoring Program

C3.2 Prior to the commencement of any remediation works a **Treated Materials Monitoring Program** shall be developed and implemented, consistent with the monitoring proposed in the document referred to under condition A1.1, unless the an alternative scope of monitoring is agreed in writing by the EPA. Unless otherwise agreed by the EPA, the Program shall monitor, but not necessarily be limited to:

a) compaction characteristics;
b) unconfined compression strength;
c) stress-strain test;
d) permeability;
e) compressibility;
f) swell potential upon wetting;
g) Placement Simulation Test (PST);
h) Monolithic Leach Test (MLT);
i) triaxial permeability and triaxial saturated strength test;
j) constant head permeation test; and
k) modified American Nuclear Society – ANS 16.1 test method for assessing the quality of contact and seepage rainwater.

Odour Monitoring Program

C3.3 Prior to the commencement of any remediation works an **Odour Monitoring Program** shall be developed and implemented, to monitor and assess the odour performance of the remediation works against the assumptions and predictions details in the documents referred to under condition A1.1 of this consent. The monitoring shall include specific provisions for the assessment of cumulative odour impacts with dredging activities in the Hunter River, and shall provide sufficient information to support continuation of the trial remediation as Stage 2 of the development, as may be relevant.

C4. REMEDIATION ENVIRONMENTAL MANAGEMENT AND REPORTING

Incident Reporting

C4.1 The Director-General shall be notified of any incident with actual or potential significant off-site impacts on people or the biophysical environment within 12 hours of the Applicant, or other relevant party undertaking the development, becoming aware of the incident. Full written details of the incident shall be provided to the Director-General within seven days of the date on which the incident occurred. The Director-General may require additional measures to be implemented to address the cause or impact of any incident, as it relates to this consent, reported in accordance with this condition, within such period as the Director-General may require.

Environmental Representative

C4.2 Prior to the commencement of any remediation works, a suitably qualified and experienced Environmental Representative(s) shall be nominated to and approved by the Director-General. The Environmental Representative(s) shall be employed for the duration of the remediation works, or as otherwise agreed by the Director-General. The Environmental Representative shall be:

a) the primary contact point in relation to the environmental performance of the dredging and associated works;
b) responsible for all Management Plans and Monitoring Programs required under this consent, in relation to the remediation works;
c) responsible for considering and advising on matters specified in the conditions of this consent, and all other licences and approvals relating to the environmental performance and impacts of the remediation works;
d) responsible for the management of procedures and practices for receiving and responding to complaints and inquiries in relation to the environmental performance of the remediation works;
e) required to facilitate an induction and training program for relevant persons involved with the development (refer to condition C4.3 of this consent); and
f) given the authority and independence to require reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur.

Environmental Training

C4.3 Prior to the commencement of any dredging or associated works an **Environmental Training Program** shall be developed and implemented to establish a framework in which relevant employees will be trained in environmental management and the operation of plant and equipment, including pollution control equipment, where relevant. The Program shall include, but not necessarily be limited to:

a) identification of relevant employment positions associated with the development that have an operational or management role related to environmental performance;

b) details of appropriate training requirements for relevant employees;
c) a program for training relevant employees in operational and/ or management issues associated with environmental performance; and
d) a program to confirm and update environmental training and knowledge during employment of relevant persons.

Remediation Environmental Management Plan

C4.4 Prior to the commencement of any remediation works, a **Remediation Environmental Management Plan** shall be prepared and submitted for the approval of the Director-General. The Plan shall outline environmental management practices and procedures to be followed during the remediation works and shall include, but not necessarily be limited to:

a) a description of all activities to be undertaken in relation to the remediation works;
b) statutory and other obligations that must be fulfilled in relation to the remediation works, including all approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;
c) a description of the roles and responsibilities for all relevant employees involved in the remediation works and a program for how these employees will be trained in responsibilities identified in the plan;
d) details of how the environmental performance of the remediation works will be monitored, and what actions will be taken to address identified adverse environmental impacts. In particular, the following environmental performance issues shall be addressed in the Plan:
    i) measures to monitor and manage dust emissions;
    ii) measures to monitor and minimise soil erosion and the discharge of sediment and other pollutants to lands and/ or waters;
    iii) measures to monitor and manage contaminated soils/ materials;
    iv) measures to monitor and control noise emissions during operation;
    v) measures to monitor and control air emissions during handling of contaminated materials;
e) an Odour Management Plan as required under condition C4.5 of this consent;
f) arrangements for community consultation and complaints handling procedures for the life of the remediation works.

C4.5 An **Odour Management Plan** shall be prepared as part of the Remediation Environmental Management Plan required under condition C4.4 of this consent, to outline measures to minimise odour impacts associated with the dredging and excavation works. The Plan shall include, but not necessarily be limited to:

a) identification of all point and diffuse sources of odour associated with the dredging and excavation works;
b) a detailed description of the odour mitigation methods and management practices that will be used throughout the dredging and excavation works to ensure offensive odour impacts do not occur off site;
c) details of the implementation of best practice management measures to ensure potential odour impacts are managed;
d) a detailed description of the methods used for monitoring the effectiveness of the odour mitigation methods and management practices for all point and diffuse sources of odour associated with the dredging and excavation works;
e) details of proposed contingency measures should odour impacts occur;
f) a procedure for handling potential odour complaints that includes recording, investigating, reporting and follow-up action; and

g) processes and procedures for coordination with the party undertaking remediation works to ensure a consistent and coordinated approach to project-specific and cumulative odour impacts.

SUBSCHEDULE D
CONDITIONS RELATING TO FULL-SCALE REMEDIATION AND REMEDIATED MATERIALS HANDLING

D1. REMEDIATION GENERAL REQUIREMENTS

Application of Sub-Schedule

D1.1 The conditions in this Sub-Schedule apply to works associated with the Stage 2 remediation activities. Stage 1B works (trial remediation and remediation optimisation) are subject to the conditions in Sub-Schedule C.

Compliance Certification

D1.2 Prior to each of the events listed from a) to c) below, or within such period otherwise agreed by the Director-General, documentation certifying that all conditions of this consent applicable prior to that event have been complied with shall be submitted to the satisfaction of the Director-General. Where an event is to be undertaken in stages, submission of compliance certification may be staged consistent with the staging of activities relating to that event, subject to the prior agreement of the Director-General:

a) commencement of the Stage 2 treatment works;
b) first emplacement of Stage 2 remediation materials in the Kooragang Waste Emplacement Facility or other facility lawfully able to accept the materials; and
c) completion of the Stage 2 remediation works.

D1.3 Notwithstanding condition D1.2 of this consent, the Director-General may require an update report on compliance with all, or any part, of the conditions of this consent. Any such update shall meet the requirements of the Director-General and be submitted within such period as the Director-General may agree.

D2. REMEDIATION DESIGN REQUIREMENTS

D2.1 In addition to the design standards and controls detailed in *Hunter River Sediment Remediation Project Concept Design Report – Placement Area RLMC Kooragang island Site Newcastle* (BHPB, URS, Douglas Partners & Connell Hatch, 30 January 2007), the containment cell(s) for treated materials from the Stage 2 remediation shall be designed, constructed and maintained to achieve the following, unless otherwise approved by the Director-General in consultation with the EPA:

a) the treated materials shall be placed in a containment cell that has a basal and side wall liner consisting of a 1.5-millimetre thick geo membrane (high density polyethylene) liner, sloping on its base by at least 1% to a sump and riser. The basal 1.5-millimetre thick high density polyethylene liner shall be suitably protected on both sides. A leachate drainage layer with a transmissivity of not less than 3×10^{-4} m^2s^{-1} shall be installed above the high density polyethylene liner. The liner shall be chemically resistant to the leachate and be able to withstand the weight of the overlying materials and any structures proposed to be constructed on the cell(s) cap(s);
b) the cell(s) shall have a leachate level management system that allows for the level of leachate within the cell(s) to be maintained at no greater than 300 millimetres above the upper surface of the cell's basal liner. The system shall be automated and shall include:
    i) an alarm system that is activated if the leachate within the cell rises to a level that is more than 300 millimetres above the cell's basal liner; and
    ii) interlocks to prevent leachate being pumped out of the cell in the event that any leachate receiving structure could overflow;
c) the cell(s) shall have leachate storage capacity to contain leachate, in a structure ex-situ the cell(s) after it is capped, and stormwater that may be contaminated by the emplaced treated materials or other pollutants before the cell(s) is capped. Any leachate dam shall be lined with a 1.5-millimetre thick high density polyethylene liner. The leachate storage requirements shall be calculated using a water balance that estimates leachate generation and

disposal rates, in monthly increments, during the 90th percentile wet year in year 1 and average monthly rainfall conditions in each subsequent year. Justification shall be provided for absorptive (field) capacity of emplaced compacted treated materials and calculations based on the following assumptions, unless suitably justified and agreed by the Director-General:

i) 95% of rainfall falling on the pre-capped emplaced treated materials becomes leachate in the form of contaminated run-off water; and
ii) 1% of rainfall becomes leachate post capping;

d) all storage dams shall have a freeboard added to their volume to contain direct rainfall on the dam from a 1 in 25 year ARI rainfall event of 24 hours duration;
e) storage and disposal methods for predicted volumes of leachate generated shall be approved by the Director-General, in consultation with the EPA, prior to the commencement of construction of the containment cell(s);
f) a gas relief system shall be installed in the cap of the cell(s) to prevent the build-up of pressure within the containment cell(s) which could damage the linear low density polyethylene capping barrier;
g) the linear low density polyethylene liner in the cap shall have a nominal thickness of 1.5 millimetres; and
h) the revegetation layer over the cap shall not include any sulfidic material that could cause acid drainage water to infiltrate the cell.

D2.2 The basal liner of the containment cell(s) shall be placed no less than 1.5 metres above the highest recorded groundwater level on the site, or as otherwise approved by the Director-General in consultation with the EPA.

D2.3 Prior to the commencement of construction of the containment cell(s) or any emplacement of treated materials on the site, the Applicant shall engage a suitably qualified and experienced person or team, approved by the Director-General to review the final design of the containment cell(s) and certify that the containment cell's liner integrity will not be compromised as a result of the settlement of natural sediment or fill material under or around the containment cell(s). A copy of this certification shall be provided to Director-General and the EPA prior to the commencement of construction of the containment cell(s).

D3. REMEDIATION ENVIRONMENTAL PERFORMANCE

Air Quality Impacts

Odour

D3.1 The development shall be undertaken so as not to permit any offensive odour, as defined under section 129 of the *Protection of the Environment Operations Act 1997*, to be emitted beyond the boundary of the site(s).

D3.2 The total exposed area of treated and untreated contaminated materials at the Mayfield site from both remediation and dredging activities combined, shall not exceed 7,000 m^2 at any time, unless otherwise agreed to in writing by the Director-General.

Dust Emissions

D3.3 All activities shall be undertaken in a manner that minimises or prevents dust emissions from the site(s), including wind-blown and traffic-generated dust. All activities undertaken on the site(s) shall be undertaken with the objective of preventing visible emissions of dust from the site(s). Should such visible dust emissions occur at any time, all practicable dust mitigation measures, including cessation of relevant works, as appropriate, shall be identified and implemented such that emissions of visible dust cease.

D3.4 All trafficable and vehicle manoeuvring areas shall be maintained at all times in a condition that minimises the generation and emission of dust.

D3.5 All vehicles entering, leaving or on the site(s) and carrying a load, which have the potential to generate dust, must be covered or otherwise enclosed at all times to minimise the generation and emission of dust. This condition does not apply during loading and unloading.

Soil and Water Quality Impacts

D3.6 Except as may be expressly permitted by a licence under the *Protection of the Environment Operations Act 1997* in relation to the development, section 120 of that Act (prohibition of the pollution of waters) shall be complied with in connection to the development.

D3.7 Surface water and stormwater shall be managed to ensure that run-off generated from disturbed areas is segregated from any water that is actually or potentially contaminated as a result of activities associated with the development. Surface water and stormwater from undisturbed areas shall be managed in accordance with *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004).

D3.8 All plant and equipment shall be thoroughly cleaned of all clean and contaminated materials prior to the removal of that plant and equipment from the site(s).

Stockpile Management

D3.9 Unless otherwise approved by the Director-General, treated and untreated contaminated materials shall be stored in an impervious bunded area(s) with sufficient volume to accommodate the materials and any leachate and contaminated water that may be generated from those materials alone and through storm events.

D3.10 All supernatant and runoff water from stockpiles, treatment, handling and placement areas shall only be discharged from the site(s) following a demonstration to the satisfaction of the Director-General that the discharge of those waters will meet the objectives of *Australian and New Zealand Water Quality Guidelines 2000* (ANZECC, 2000) or as may be expressly permitted by a licence under the *Protection of the Environment Operations Act 1997*.

Noise Impacts

Restrictions to Hours

D3.11 To avoid any doubt, activities associated with the Stage 2 remediation are permitted to be undertaken at any time (24 hours per day), subject to compliance with the conditions of this consent. All activities to be undertaken before 07:00 or after 18:00 on any day, or on a weekend or public holiday at any time, shall be subject to detailed noise mitigation, monitoring and management measures specified in an approved Noise Management Plan (refer to condition D5.D5.6).

Noise Limits

D3.12 All remediation activities and associated works shall be undertaken such that the noise contributed from those activities and works to the background acoustic environment does not exceed the maximum noise contribution limits specified in Table 4, at the locations indicated, and during the periods specified. The noise limits specified under this condition only apply under the following meteorological conditions:

a) wind speeds up to 3ms^{-1} at 10 metres above ground level; or
b) under temperature inversion conditions of up to 3^{o}C per 100 metres and wind speeds up to 2ms^{-1} at 10 metres above ground level.

Table 5 - Maximum Allowable Noise Contributions

Location	Day *07:00 to 18:00 Mondays to Saturdays* *08:00 to 18:00 Sundays/ public holidays*	Evening *18:00 to 22:00 any day*	Night *22:00 to 07:00 Mondays to Saturdays* *22:00 to 08:00 Sundays/ public holidays*	
	$L_{Aeq(15\text{-}minute)}$	$L_{Aeq(15\text{-}minute)}$	$L_{Aeq(15\text{-}minute)}$	$L_{A1(1\text{-}minute)}$
NM1 – 21 Crebert Street, Mayfield	62	58	53	63
NM2 – 52 Arthur Street, Mayfield	56	55	48	58
NM3 – 1 Arthur Street, Mayfield	51	51	48	58
NM4 – Mayfield East Public School	52	50	47	57
NM5 – Cnr Wye Street and Avon Street, Mayfield	50	50	47	57
NM6 – 45 Simpson Circuit, Mayfield	51	54	51	61

D3.13 For the purpose of assessment of noise contributions specified under condition D3.12, noise from the development shall be:

a) measured at the most affected point on or within the boundary of the most-affected noise sensitive locations; and

b) subject to the modification factors provided in Section 4 of the *New South Wales Industrial Noise Policy* (EPA, 2000), where applicable.

Notwithstanding, should direct measurement of noise from the development be impractical, an alternative noise assessment method deemed acceptable by the Director-General (refer to Section 11 of the *New South Wales Industrial Noise Policy* (EPA, 2000)) may be employed. Details of such an alternative noise assessment method shall be developed in consultation with the EPA and submitted to the Director-General prior to the implementation of the assessment method.

Ecological Impacts

D3.14 In addition to any other compensatory habitat requirements for Stages 1A and 1B of the development, and prior to the commencement of works associated with Stage 2 of the development that will result in the removal of vegetation communities and habitat, or within such further period as may be agreed by the Director-General, a compensatory habitat package for threatened species habitat impacted by the project, in particular *Litoria aurea* and *Botarus poiciloptilus* shall be developed in consultation with the OEH and submitted for the approval of the Director-General. The package shall detail a program to offset the loss of threatened species habitat as a result of Stage 2 of the development, and how the Applicant will contribute towards research into measures to enhance the survival of *Litoria aurea* individuals and populations. The compensatory habitat package shall include, but not necessarily be limited to:

a) an ecological survey, following detailed design of the containment cell(s), to identify and quantify the extent of threatened species habitat that would be lost or degraded as a result of the Stage 2 works;

b) establishment of compensatory habitat, equivalent to no less than twice the area of habitat identified under a) with commencement of compensatory habitat works within six months of the commencement of construction of the containment cell(s), unless otherwise agreed by the Director-General;

c) identification of management actions required to ensure the long-term viability and functionality of compensatory habitat established under b);

d) the establishment of a board, trust or other mechanism that provides a sound and legally enforceable means of allocating adequate resources for the on-going adaptive management of the compensatory habitat;
e) research into factors that may contribute to the long-term survival of *Litoria aurea* individuals and populations within its range, identified in consultation with relevant ecological groups and researchers;
f) consideration of coordinating compensatory habitat works with similar requirements for other developments, including the Newcastle Coal Infrastructure Group coal export terminal (MP 06_0009, approved by the Minister for Planning on 13 April 2007); and
g) timing and responsibilities for implementation of the program.

Traffic and Transport Impacts

Remediated Materials Transport Strategy

D3.15 Prior to the commencement of the transport off-site of remediated materials, a **Remediated Materials Transport Strategy** shall be developed and submitted for the approval of the Director-General. The Strategy shall be prepared in consultation with the RMS and Newcastle City Council, Newcastle Ports Corporation, and shall include, but not necessarily be limited to:

a) a strategic transport plan for the transport of treated materials on and off-site;
b) identification of the quantities of materials, transport mode and number of traffic movements necessary to remove materials from the treatment site;
c) establishment of a road hierarchy for transport of materials from each phase, having due consideration to destination of materials, road capacity restrictions, peak traffic flows, cumulative traffic impacts, sensitive road users (including public transport and school-related traffic), and restrictions of the use of B-doubles;
d) establishment of traffic movement scheduling to minimise conflicts with peak traffic flows, sensitive road users and to distribute traffic flows to distribute impacts to the greatest extent reasonably possible;
e) identification and assessment of alternatives to road haulage of materials, including where feasible, conveyance of materials by pipe, rail and sea;
f) identification and commitment to the installation and maintenance of any necessary road safety infrastructure and management measures, with specific reference to intersection management;
g) proactive and reactive measures for traffic monitoring, planning and management over the life of the development; and
h) specific consideration of coordination provisions to avoid concurrent peak impacts associated with dredging and remediation works.

D3.16 Condition D3.15 of this consent may be satisfied by demonstrating to the satisfaction of the Director-General that an approved Treated Material Transport Strategy prepared for Stage 1B of the development has been updated to reflect progression to Stage 2 of the development. The Remediated (or Treated) Materials Transport Strategy can be incorporated within the Dredged Material Transport Strategy (required under the existing consent condition B2.29) and be submitted as a single document for Director-General approval.

Waste Generation and Management

D3.17 Wastes generated by the development or from outside the site(s) shall not be caused, permitted or allowed to be received at the site(s) for storage, treatment, processing, reprocessing, or disposal on the site(s), except as expressly permitted by a licence issued under the *Protection of the Environment Operations Act 1997*. This condition only applies to the storage, treatment, processing, reprocessing to disposal of wastes where such a licence is required.

D3.18 Sediments, whether treated or untreated, shall not be stored on the Mayfield site for longer than 12 months from the date of receipt of the sediments, including testing and validation, without the prior written approval of the Director-General.

D3.19 Treated sediments shall be emplaced at the Kooragang Waste Emplacement Facility, or other facility lawfully able to accept the treated sediments.

Hazards and Risk

D3.20 The Proponent shall store and handle all dangerous goods, as defined by the Australian Dangerous Goods Code, and all fuels, oils chemicals or other environmentally hazardous materials strictly in accordance with:

a) all relevant Australian Standards;
b) for liquids, a minimum bund volume requirement of 110% of the volume of the largest single stored volume within the bund; and
c) the EPA's Environment Protection Manual Technical Bulletin *Bunding and Spill Management*.

In the event of an inconsistency between the requirements listed from a) to c) above, the most stringent requirement shall prevail to the extent of the inconsistency.

Property Impacts

D3.21 Where utilities, services and access is to be affected by the development, requirements for the use, alteration, diversion, protection and/or support, shall be determined by negotiation and agreement with the provider and/or owner.

Visual Amenity Impacts

D3.22 The Proponent shall ensure that all external lighting associated with the project is mounted, screened, and directed in such a manner so as not to create a nuisance to the surrounding environment, port operations, properties and public roadways. The lighting shall be the minimum level of illumination necessary and shall comply with *AS 4282(INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting.*

D4. REMEDIATION ENVIRONMENTAL MONITORING AND AUDITING

Groundwater Monitoring

D4.1 Prior to the commencement of construction of the containment cell(s), a **Groundwater Monitoring Program** shall be developed and implemented to identify and monitor groundwater contaminants and to assess the impacts of the containment cell(s) construction and operation on groundwater hydrology and quality, particularly the migration of groundwater contaminants towards the Hunter River. The Program shall be developed in consultation with the Department and the EPA, and shall include a contingency plan to mitigate identified and predicted adverse contaminated groundwater impacts. The Program shall specifically focus on the effects of the works associated with containment cell(s) and associated infrastructure during construction and operation.

D4.2 For the purpose of condition D4.1 of this consent, the Applicant shall establish groundwater trigger values against which the performance of the containment cell(s) will be monitored and assessed. The groundwater trigger values shall encompass the substances and their concentrations that will be used to assess the performance of the containment cell(s) with respect to groundwater quality. Groundwater trigger values shall be developed in consultation with the EPA, and to the satisfaction of the Director-General.

Environmental Monitoring and Cell Maintenance Program

D4.3 Prior to the commencement of construction of the containment cell(s), the Applicant shall develop and submit for the approval of the Director-General, an **Environmental Monitoring and Cell Maintenance Program** detailing monitoring and maintenance

procedures for the construction and operation of the containment cell(s). The Program shall be developed in consultation with the EPA and shall include, but not necessarily be limited to:

a) procedures for monitoring of surface water, groundwater, leachate and gaseous emissions from the containment cell(s);
b) procedures for the maintenance of the containment cell's cap, leachate collection, conveyance and management systems and other relevant works;
c) assessment and management of processes to establish whether groundwater trigger values (refer to conditions D4.1 and D4.2) are being exceeded, or are likely to be exceeded as a result of the containment cell(s); and
d) management actions and contingency measures to be implemented in the event that elevated groundwater values, or the activation of trigger values during either construction or operation of the containment cell(s).

Construction Quality Assurance

D4.4 Prior to the commencement of construction of the containment cell(s), the Applicant shall prepare and submit for the approval of the Director-General, details of the containment cell's design, construction, operation, monitoring and contingencies for rehabilitation works. Documentation shall include, but not necessarily be limited to drawings 'for construction' and construction quality assurance (CQA) procedures to ensure that works will be installed in accordance with design specifications.

D4.5 Prior to the emplacement of any treated materials within the containment cell(s), the Applicant shall submit for the approval of the Director-General a CQA report. The CQA report shall include, but not necessarily be limited to:

a) 'as constructed' drawings, prepared from field surveys depicting at a suitable scale, with elevations using AHD of the cell's floor, the following:
    i) the upper surface of the basal liner (including that for any leachate dam);
    ii) the upper surface of the leachate collection drainage layer and pipe grades;
    iii) the upper and lower surface of each of the layers in the cap;
    iv) the perimeter of the cell and cross-sections of the basal features of the cell (in plan view);
    v) the leachate levels within the riser(s) that will trigger leachate extraction (in plan view); and
    vi) the visual alarm in the event that the leachate head is greater than 300 millimetres (in plan view);
b) CQA procedures, including:
    i) tests and frequencies to demonstrate that each component of the cell's infrastructure was installed in accordance with design specifications; and
    ii) a report by a suitably qualified and experienced person to confirm that the cell(s) was constructed in accordance with its design specifications.

D5. REMEDIATION ENVIRONMENTAL MANAGEMENT AND REPORTING

Incident Reporting

D5.1 The Director-General shall be notified of any incident with actual or potential significant off-site impacts on people or the biophysical environment within 12 hours of the Applicant, or other relevant party undertaking the development, becoming aware of the incident. Full written details of the incident shall be provided to the Director-General within seven days of the date on which the incident occurred. The Director-General may require additional measures to be implemented to address the cause or impact of any incident, as it relates to this consent, reported in accordance with this condition, within such period as the Director-General may require.

Environmental Representative

D5.2 Prior to the commencement of Stage 2 remediation works, a suitably qualified and experienced Environmental Representative(s) shall be nominated to and approved by the Director-General. An approved Environmental Representative(s) shall be employed for the duration of the remediation works, or as otherwise agreed by the Director-General. The Environmental Representative shall be:

the primary contact point in relation to the environmental performance of the remediation and associated works;

a) responsible for all Management Plans and Monitoring Programs required under this consent, in relation to the remediation works;
b) responsible for considering and advising on matters specified in the conditions of this consent, and all other licences and approvals relating to the environmental performance and impacts of the remediation works;
c) responsible for the management of procedures and practices for receiving and responding to complaints and inquiries in relation to the environmental performance of the remediation works; and
d) given the authority and independence to require reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur.

Remediation Environmental Management Plan

D5.3 Prior to the commencement of Stage 2 treatment works, a **Remediation Environmental Management Plan** shall be prepared and submitted for the approval of the Director-General. The Plan shall outline environmental management practices and procedures to be followed during the remediation and emplacement works and shall include, but not necessarily be limited to:

a) a description of all activities to be undertaken in relation to the remediation works;
b) statutory and other obligations that must be fulfilled in relation to the remediation works, including all approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;
c) a description of the roles and responsibilities for all relevant employees involved in the remediation works and a program for how these employees will be trained in responsibilities identified in the plan;
d) identification, management and disposal of existing contaminants and wastes at the emplacement cell site;
e) the management of potential acid sulphate soils and acid generation from fill materials at the emplacement cell site;
f) details of how the environmental performance of the works will be monitored, and what actions will be taken to address identified adverse environmental impacts. In particular, the following environmental performance issues shall be addressed in the Plan:
    i) measures to monitor and manage dust emissions;
    ii) measures to monitor and minimise soil erosion and the discharge of sediment and other pollutants to lands and/ or waters;
    iii) measures to monitor and manage contaminated soils/ materials;
    iv) measures to monitor and control noise emissions during operation;
    v) measures to monitor and control air emissions during handling of contaminated materials;
g) an Odour Management Plan as required under condition D5.5 of this consent;
h) a Noise Management Plan as required under condition D5.6 of this consent;; and
i) arrangements for community consultation and complaints handling procedures for the life of the remediation works.

D5.4 Condition D5.3 of this consent may be satisfied by demonstrating to the satisfaction of the Director-General that an approved Remediation Environmental Management Plan for Stage 1B of the development has been updated to reflect progression to Stage 2 of the development.

D5.5 An **Odour Management Plan** shall be prepared as part of the Remediation Environmental Management Plan required under condition D5.3 of this consent, to outline measures to minimise odour impacts associated with the Stage 2 treatment and emplacement works. The Plan shall include, but not necessarily be limited to:

a) inclusion of the results, conclusions and recommendations from the Stage 1B remediation works (including associated optimisation studies);
b) identification of all point and diffuse sources of odour associated with the Stage 2 treatment and emplacement works;
c) a detailed description of the odour mitigation methods and management practices that will be used throughout the treatment and emplacement works to ensure offensive odour impacts do not occur off site;
d) details of the implementation of best practice management measures to ensure potential odour impacts are managed;
e) a detailed description of the methods used for monitoring the effectiveness of the odour mitigation methods and management practices for all point and diffuse sources of odour associated with the treatment and emplacement works;
f) implementation of instrumentation to measure and record wind speed and direction at the project site, in accordance with the *"Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales"* DEC, 2006, Method No. AM-1 and AM-2;
g) details of proposed contingency measures should odour impacts occur;
h) a procedure for handling potential odour complaints that includes recording, investigating, reporting and follow-up action; and
i) processes and procedures for coordination with the party undertaking remediation works to ensure a consistent and coordinated approach to project-specific and cumulative odour impacts.

D5.6 A **Noise Management Plan** shall be prepared as part of the Remediation Environmental Management Plan required under condition D5.3 of this consent, to outline measures to minimise noise impacts associated with the Stage 2 remediation works. The Plan shall include, but not necessarily be limited to:

a) inclusion of the results, conclusions and recommendations from the Stage 1B remediation works (including associated optimisation studies);
b) details of remediation activities and a schedule for remediation works;
c) identification of remediation activities that have the potential to generate noise and/or vibration impacts on surrounding sensitive receivers, particularly residential areas and other sensitive land uses;
d) a detailed description of what actions and measures would be implemented to ensure that these works would comply with the relevant noise and vibration criteria/ guidelines, including the identification of these;
e) procedures for notifying residents of remediation activities that are likely to affect their noise and vibration amenity, as well as procedures for dealing with and responding to noise complaints; and
f) a description of how the effectiveness of these actions and measures would be monitored during the proposed works, clearly indicating how often this monitoring would be conducted, how the results of this monitoring would be recorded, and if any non-compliance is detected.