



**Environment,
Climate Change
& Water**

Your reference: S08/01676; 09_0006
Our reference: DOC10/31108;
LIC07/2054-03
Contact: Rebecca Scrivener,
4908 6830

Mr Chris Ritchie
Major Development Assessment
Department of Planning
GPO Box 39
SYDNEY NSW 2001

18 AUG 2010

Dear Mr Ritchie

**National Ceramic Industries Australia – Expansion of Existing Tile Manufacturing Facility
(09_0006) – Exhibition of Environmental Assessment – Project Approval Application**

I refer to your letter dated 12 July 2010 seeking written submissions from the Department of Environment, Climate Change and Water¹ (DECCW) on the above proposal. I refer also to the document '*National Ceramic Industries Australia – Environmental Assessment*' prepared by AECOM and dated July 2010 ('the EA').

DECCW understands that the project approval application is to expand the existing ceramic tile manufacturing facility at Rutherford in the lower Hunter Valley. The proposed development includes:

- construction and operation of a second factory building with four additional production lines and ancillary infrastructure (referred to as Stage 5-8); and
- an increase to the approved output of 12.8 million square metres (Mm²) of tiles per annum to an overall output of 25.6 Mm² of tiles per annum.

DECCW notes that the proponent is also seeking consolidation of the existing approval (449-12-2002-i) within the proposed expansion if approval is granted.

DECCW has reviewed the information provided. Details of DECCW's review are contained in Attachment A. Based on this review, DECCW has determined that it is able to recommend conditions of approval contained in Attachment B. DECCW's recommended conditions of approval are specifically for Stages 5-8 of the proposed expansion. DECCW assumes the conditions provided on the existing approval will remain as currently drafted if the existing approval (449-12-2002-i) is consolidated within the proposed expansion, if approval for the proposed expansion is granted.

The recommended conditions of approval provided below relate to the development as proposed in the documents and information currently provided to DECCW. In providing this advice, DECCW notes that the Department of Planning will address generic construction and operation management requirements. Consequently, recommended conditions focus on key environmental matters specific to this proposal.

Please note that this submission does not include comments on matters that fall under the responsibility of the DECCW's Office of Water.

DECCW would appreciate receiving a copy of the submissions received by the Department of Planning (or a report summarising these submissions) in response to the exhibition of the EA. This will enable DECCW to review the appropriateness of, and determine the need for any amendments to, recommended conditions of approval.

If you have any questions, or wish to discuss this matter further, please contact Rebecca Scrivener on 4908 6830.

Yours sincerely

A handwritten signature in black ink, appearing to read 'MBS', followed by a long horizontal flourish.

MITCHELL BENNETT
Head Major Industries Unit - Hunter Region
Environment Protection and Regulation

Enl: Attachment A and Attachment B

ATTACHMENT A**DECCW COMMENTS ON ENVIRONMENTAL ASSESSMENT
NATIONAL CERAMIC INDUSTRIES AUSTRALIA (09-0006)****1. AIR**

DECCW understands that the Department of Planning is considering a modification application (449-12-2002-I MOD) submitted by the proponent in April 2010 seeking to modify the oxygen correction factor, being 7% oxygen, applied to emission concentrations for solid particle and NOx emission measurements from the kiln. Because this modification is still being assessed by the Department of Planning, DECCW has assumed a 7% oxygen correction factor in our assessment.

DECCW has reviewed the Air Quality Impact Assessment provided in the EA and focused on the assessment's consistency with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (DECCW, 2005) (Approved Methods)* and DECCW's environmental assessment requirements.

The issues raised in DECCW's adequacy review have been addressed directly and/or through proposed mitigation measures that may be formalised through recommended conditions of approval provided in Attachment B.

It is noted that the focus of the Air Quality Impact Assessment provided in the EA is on the impacts associated with PM₁₀ and fluoride emissions from the premises. With regard to fluoride emissions from the proposed project, DECCW notes that model predictions for cumulative fluoride concentration for Scenario 2 (existing operation + proposed expansion – ie Stages 1-8) exceed 24 hour and 90 day ground level concentration criteria at residential receiver locations 1, 20, 21 and 22 (refer Table 13 of EA - Appendix C). I note these locations are either on the boundary of the proposed expansion site and/or are located within the adjacent golf course area currently being considered for a potential residential development.

DECCW identified in April 2003 (in response to the National Ceramics - Stages 1-4 proposal) that there was potential for Stages 1-4; under worst case scenarios, to consume almost all the available capacity for additional fluoride contributions in this area. Given the model predictions presented for Stages 5-8 are generally within the ground level concentration criteria and the locations of the exceedances identified above are not located within specialised land use activities (such as grape growing), DECCW proposes to maintain the existing stack emission limit of 5mg/m³, continue to require vegetation monitoring in accordance with current environment protection licence requirements and not increase the load limit for fluoride currently applied to the premises .

Recommended Conditions of Approval - DECCW has provided recommended conditions of approval in Attachment B formalising the proponent's performance commitments made in the Air Quality Impact Assessment within the EA.

2. GREENHOUSE GAS EMISSIONS

DECCW has reviewed the Greenhouse Gas Assessment and notes the proponent has provided an assessment of greenhouse gas emissions and energy use at the expanded facility. Scope 1, 2 and 3 emissions have been estimated using appropriate methodology.

Annual greenhouse gas emissions from the facility will increase from 127 to 250 kt CO₂ equivalent after the expansion of the facility. Greenhouse gas emissions from electricity consumption are estimated using energy intensity factors of 200 kWh per tonne of product. At full production this indicates that the facility could use over 100 GWh of electricity per annum. Section 4.9.3 however estimates that total electricity use at the expanded facility would likely be 77 GWh per annum. DECCW notes that the estimates of greenhouse gas emissions from electricity use provided in the EA are calculated using the higher estimate of 100 GWh electricity use.

Greenhouse gas emissions from on-site gas use are calculated using at gas consumption at full production of approximately 2.8 PJ per annum. However section 4.9.2 indicates that total gas demand from the expanded facility is likely to be 2.3 PJ per annum, taking into account efficiency improvements from the new facility. DECCW notes that the estimated greenhouse gas emissions from natural gas consumption provided by the proponent use the higher gas consumption estimates.

The proponent has identified options to improve energy efficiency of the project. In particular the proponent has identified that the installation of co-generation plants that utilise waste heat to produce electricity may provide an opportunity to improve process efficiency and reduce greenhouse gas emissions. DECCW notes that while the installation of co-generation plants does not form part of the project application, the proponent has provided a commitment that the design of the plant would allow for the addition of electricity co-generation facilities at a later date by leaving space and allowing for easy connection and integration of the plants into the facility

Recommended Conditions of Approval - DECCW does not propose any specific recommended conditions of approval relating to greenhouse gas emissions for the proposal.

3. NOISE

DECCW has conducted a detailed review of the EA with a focus on the EA's consistency with the *NSW Industrial Noise Policy* (EPA, 2000) (the INP) and DECCW's environmental assessment requirements.

The Noise Impact Assessment has been carried out in accordance with the INP and satisfied DECCW's environmental assessment requirements. The EA provides sufficient information to demonstrate that the proposal could be developed so that compliance with relevant noise criteria is achieved.

The EA appears to contain an error in the presentation of data provided in Figure 10 of the EA. Figure 10 presents predicted noise contours developed from the assessments provided by Bridges (2002) and Heggies (2009). It appears that the predicted noise level contours from the Bridges report for the existing facility are greater than the noise contour levels provided by Heggies. In essence, Figure 10 states that the noise impacts from Stages 1-4 (existing) are greater than the noise impacts from Stage 1-8 (existing plus proposed). There is no text provided to explain this.

DECCW has attempted to contact the proponent to clarify this issue, but has not been able to resolve it in the time available for comment. Accordingly DECCW recommends that the proponent be required to clarify if an error has been made in the modelling or presentation of data in Figure 10. If no explanation is provided, in accordance with the INP Noise Application Notes, DECCW will set licence limits at the predicted noise levels presented in the EA (ie limits predicted by Heggies 2009).

Recommended Conditions of Approval - DECCW has provided a number of recommended conditions of approval, including predicted noise limits as noted above, relating to noise for the proposed extension.

4. WATER

The proponent commits to zero discharge of process water from the premises and has proposed a stormwater management system that is consistent with the existing stormwater system installed at the premises. It is noted that the proponent does not propose to have a licensed water discharge point(s) at the premises and as such only clean stormwater will be discharged from the premises on an 'as-needs' basis.

Recommended Conditions of Approval - DECCW has recommended that its standard conditions of approval relating to water pollution (section 120 of the *Protection of the Environment Operations Act 1997*) apply to this proposal.

5. ABORIGINAL CULTURAL HERITAGE

DECCW has reviewed the Heritage and Archaeology assessment provided in Chapter 14 of the EA and has identified the following issues:

5.1 Issued Director General Requirements for Aboriginal Heritage

In DECCW correspondence dated 7 May 2010, it was highlighted that the Director-General's Requirements of Department of Planning (issued 25 February 2009) required the proponent to follow the DEC (2005) *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessments and Community Consultation*. There is no evidence that the Aboriginal Heritage assessment has been undertaken in the manner required by the issued Director General Requirements.

DECCW recommends that the Department of Planning condition any consent issued to ensure Aboriginal cultural heritage is managed appropriately within the development.

5.2 Aboriginal community consultation

There no evidence of appropriate consultation with the local Aboriginal community. The assessment relies on the 2002 EIS, where only Mindaribba Local Aboriginal Land Council was consulted. This is not consistent with either DECCW's *Interim Community Consultation Requirements 2005* or the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*.

DECCW expects that current consultation requirements will be adhered to for ongoing projects and all local Aboriginal groups with an interest in the area should be afforded the opportunity to comment, discuss issues, inspect the area, relay their cultural knowledge and nominate the cultural significance of the sites/area. Evidence of such consultation could be provided in a submissions report.

DECCW recommends that the conditions of consent require a continuing fair and equitable consultation process.

5.3 Archaeological and Aboriginal Survey & Assessment

The revised Aboriginal Cultural Heritage assessment provided to determine potential impacts is inadequate. It fails to provide any evidence of the cultural significance attributed to the location by the wider local Aboriginal community.

The EA does not adequately discuss the survey and assessment for the extension area. The EA discusses the low significance of disturbed materials, but not how that will be managed effectively. Without adequate consultation, the revised report does not adequately cover the concerns raised in DECCW's previous correspondence of 7 May 2010.

5.4 Archaeological and Cultural Heritage Management Plan (ACHMP)

DECCW recommends that an Archaeological and Cultural Heritage Management Plan be developed in consultation with the local Aboriginal community to provide guidance and processes for the applicant in managing Aboriginal cultural heritage issues that may arise during the proposed expansion works.

Recommended Conditions of Approval - DECCW has provided a number of Recommended Conditions of Approval in Attachment B to ensure mechanisms are put in place to address the inadequacies in the Aboriginal cultural heritage assessment identified above.

6. THREATENED SPECIES

DECCW acknowledges the proposed expansion does not have a significant impact on threatened species, particularly given the disturbed nature and previous land use of the site. DECCW notes the proponent's commitment to revegetate approximately 1.34 ha of land at the premises with native vegetation.

Recommended Conditions of Approval - DECCW has not proposed any specific recommended conditions of approval relating to threatened species for the proposal.

7. WASTE

DECCW notes the waste streams identified in Chapter 4 of the EA and acknowledges some of the waste stream including 'green' tiles and baghouse waste will be reused in the manufacturing process. Other wastes such as construction waste, fired tiles and general waste will be recycled where possible or disposed to landfill as appropriate.

Recommended Conditions of Approval - DECCW has recommended standard waste conditions of approval for consideration in Attachment B.

8. LANDUSE CONFLICT

The EA focuses on the existing premises and surrounding environment. DECCW understands that currently adjoining the project expansion site is a golf course, which has a low probability of being adversely impacted by noise or air emissions from the proposed expansion.

However, DECCW understands that Maitland Council is currently considering an application to redevelop the golf course into a residential estate. In February 2009, DECCW wrote to Maitland Council highlighting the risk of landuse conflict if the proposed residential estate adjacent to National Ceramic Industries Australia was to be approved.

The EA confirms that there is a high likelihood of unacceptable noise and air quality impacts to future residents if the proposed residential estate proceeds without the incorporation of appropriate noise and air quality mitigation measures. Implementation of this mitigation would appear to be partially the responsibility of the residential estate proponent. As DECCW is not the appropriate regulatory authority for residential estates, DECCW will be unable to enforce such mitigation requirements on the residential estate proponent.

In the event that the residential development and the proposed expansion proceeds, and future residents of the residential estate complain of impacts from noise and air emissions from the proposed expansion, DECCW's regulatory power would be limited to negotiating with National Ceramic Industries Australia to implement all feasible (technically possible) and reasonable (practically able to be implemented given operational, safety, cost and other such considerations) mitigation measures.

DECCW understands, from verbal advice from Department of Planning during a joint site inspection on 4 August 2010 of the National Ceramic Industries Australia premises, that the residential development application is well advanced. Accordingly, DECCW considers it not unreasonable that National Ceramic Industries Australia be expected to incorporate all feasible and reasonable mitigation measures in the current application for the proposed expansion.

DECCW also recommends that the Department of Planning advise Maitland Council that if it is intended that both the Rutherford Industrial Area and the proposed residential development are to co-exist, that Maitland Council require the residential estate developer to incorporate appropriate mitigation measures in any approval issued. This may include, but not necessarily be limited to residences being designed to meet the noise criteria in the Department of Planning's Infrastructure SEPP and associated guidelines, for buildings adjacent to busy roads and railways. Alternatively it would appear that Maitland Council would have to condition, in any approval for the proposed residential estate development, for the proponent to insert appropriate clauses in sale contracts specifically and explicitly alerting potential purchasers to the fact that the properties are adjacent to the Rutherford Industrial Area and therefore may be subject to noise and air quality impacts in excess of NSW guidelines. Such an action would be similar to that implemented by Department of Planning's approval of early occupancy of Meriton apartments during ongoing remediation and construction on the Rhodes Peninsula, and is envisaged to use similar wording to that in condition F1A of the

Modifying Instrument for early occupancy of Lot 103 (consent reference – 05_0042_MOD 3). The difference would be that Maitland Council's requirement would not be limited to the duration of construction but would have to have force in perpetuity.

DECCW also recommends Department of Planning advise Council to attach Section 149 certificates to all properties if it approves the residential estate, advising that the properties are adjacent to an industrial area and subject to noise and air quality impacts.

- End -

18 August 2010

ATTACHMENT B**DECCW RECOMMENDED CONDITIONS OF APPROVAL****NATIONAL CERAMIC INDUSTRIES AUSTRALIA (09-0006)**

Note: Although the Environment Protection Authority is now a part of DECCW, certain statutory functions and powers continue to be exercised in the name of the EPA. This includes licensing functions under the *Protection of the Environment Operations Act 1997*. In these instances, reference is made to the EPA instead DECCW.

ADMINISTRATIVE CONDITIONS**Works to be undertaken in accordance with information supplied**

1. Except as provided by these general terms of approval, the works and activities shall be undertaken in accordance with the proposal contained in:
 - (a) The major project application no. 09_0006 submitted to the Department of Planning;
 - (b) The document '*National Ceramic Industries Australia – Environmental Assessment*' prepared by AECOM and dated July 2010;
 unless otherwise specified in these conditions of approval.

Obligation to Minimise Harm to the Environment

2. The proponent shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, maintenance, decommissioning or rehabilitation of the project.

Maintenance of plant and equipment

3. All plant and equipment installed at the premises or used in connection with the proposal:
 - (a) shall be maintained in a proper and efficient condition; and
 - (b) shall be operated in a proper and efficient manner.

AIR**Dust**

4. The premises shall be maintained and operated in a condition which minimises or prevents the emission of dust from the premises.

Monitoring records

5. The results of any monitoring required to be conducted by this consent or a load calculation protocol shall be recorded and retained as set out in condition 6 and condition 7.
6. All records required to be kept by this consent shall be:
 - (a) in a legible form, or in a form that can readily be converted to a legible form;
 - (b) kept for at least four years after the monitoring or event to which they relate took place; and
 - (c) produced in a legible form to any authorised officer of the EPA or Department of Planning who asks to see them.
7. The following records shall be kept in respect of any samples required to be collected for the purposes of this consent:
 - (a) the date(s) on which the sample was taken;
 - (b) the time(s) at which the sample was collected;
 - (c) the point at which the sample was taken; and
 - (d) the name of the person who collected the sample.

Testing methods - concentration limits

8. Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this consent shall be done in accordance with:
- any methodology which is required by or under the *Protection of the Environment Operations Act 1997* to be used for the testing of the concentration of the pollutant; or
 - if no such requirement is imposed by or under the *Protection of the Environment Operations Act 1997*, any methodology which a condition of this consent requires to be used for that testing; or
 - if no such requirement is imposed by or under the *Protection of the Environment Operations Act 1997* or by a condition of this consent, any methodology approved in writing by the Department of Planning for the purposes of that testing prior to the testing taking place.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2002* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

Monitoring/discharge points and areas

9. The following points referred to in the table below are identified in this project approval for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

Identification Number	Type of Monitoring Point	Type of Discharge Point	Description of Location
25	Discharge to Air	Discharge to Air Stack	Dust extractor clay preparation CP3 and CP4
26	Discharge to Air	Discharge to Air Stack	Pressing and drying PD3 and PD4
27	Discharge to Air	Discharge to Air Stack	Dryers D5
28	Discharge to Air	Discharge to Air Stack	Dryers D6
29	Discharge to Air	Discharge to Air Stack	Dryers D7
30	Discharge to Air	Discharge to Air Stack	Dryers D8
31	Discharge to Air	Discharge to Air Stack	Glaze Line GL 5678
32	Discharge to Air	Discharge to Air Stack	Selection Line SL 5678
33	Discharge to Air	Discharge to Air Stack	Sprayer Dryers SD3 and SD4
34	Discharge to Air	Discharge to Air Stack	Sprayer Dryers SD4
35	Discharge to Air	Discharge to Air Stack	Kilns KP5
36	Discharge to Air	Discharge to Air Stack	Kilns KP6
37	Discharge to Air	Discharge to Air Stack	Kilns KP7
38	Discharge to Air	Discharge to Air Stack	Kilns KP8
39	Discharge to Air	Discharge to Air Stack	Hot air coolers HAC5
40	Discharge to Air	Discharge to Air Stack	Hot air coolers HAC6
41	Discharge to Air	Discharge to Air Stack	Hot air coolers HAC7
42	Discharge to Air	Discharge to Air Stack	Hot air coolers HAC8

10. For each monitoring/discharge point or utilisation area specified in the table/s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, shall not exceed the concentration limits specified for that pollutant in the table.

Points 25-34 and 39- 42

Pollutant	Units of Measure	100 Percentile Concentration Limit	Averaging Period	Reference Conditions
Solid Particles (total)	milligrams per cubic metre	20	1-hour, or the minimum sample frequency specified in the relevant test method, whichever is the greater	Dry, 273 K, 101.3 kPa, 7% oxygen (O ₂)

Points 35-38

Pollutant	Units of Measure	100 Percentile Concentration Limit	Averaging Period	Reference Conditions
Cadmium	milligrams per cubic metre	0.1	1-hour, or the minimum sample frequency specified in the relevant test method, whichever is the greater	Dry, 273 K, 101.3 kPa, 7% oxygen (O ₂)
Mercury	milligrams per cubic metre	0.1	1-hour block	Dry, 273 K, 101.3 kPa, 7% oxygen (O ₂)
Nitrogen dioxide (NO ₂) or nitric oxide (NO) or both, as NO ₂ equivalent	milligrams per cubic metre	100	1-hour block	Dry, 273 K, 101.3 kPa, 7% oxygen (O ₂)
Solid Particles (total)	milligrams per cubic metre	20	1-hour, or the minimum sample frequency specified in the relevant test method, whichever is the greater	Dry, 273 K, 101.3 kPa, 7% oxygen (O ₂)
Sulphuric acid mist and sulphur trioxide (asSO ₃)	milligrams per cubic metre	100	1-hour, or the minimum sample frequency specified in the relevant test method, whichever is the greater	Dry, 273 K, 101.3 kPa, 7% oxygen (O ₂)
Hazardous substances (Type 1 and Type 2 substances in aggregate)	milligrams per cubic metre	1		
Fluorine (F ₂) and any compound containing fluorine as total fluoride (HF) equivalent	milligrams per cubic metre	5	1-hour, or the minimum sample frequency specified in the relevant test method, whichever is the greater	Dry, 273 K, 101.3 kPa, 7% oxygen (O ₂)

Load Limits

11. For each assessable pollutant identified below, the total load discharged from the site during the reporting period must not exceed the load limit specified for that pollutant in the table. The total load of the assessable pollutant must be calculated in accordance with the relevant load calculation protocol, as defined by DECCW guidelines.

Assessable Pollutant	Maximum Allowable Load Limit (kg)
Fine particulates	73670
Coarse particulates	32073
Fluoride	3701
Sulfur oxides	73657
Nitrogen oxides	73657

Requirement to monitor concentration of pollutants discharged

12. For each monitoring/discharge point specified below (by a point number), the proponent shall monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1 ('Pollutant'). The proponent shall use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

Points 25-34 and 39- 42

Pollutant	Units of Measure	Frequency	Sampling Method
Dry gas density	kilograms per cubic metre	Post commissioning and yearly	TM-23
Molecular weight of stack gases	grams per gram mole	Post commissioning and yearly	TM-23
Moisture content	percent	Post commissioning and yearly	TM-22
Velocity	metres per second	Post commissioning and Yearly	TM-2
Temperature	degrees Celsius	Post commissioning and yearly	TM-2
Volumetric flow rate	cubic metres per second	Post commissioning and continuous	TM-2 and CEM-6
Solid Particles	milligrams per cubic metre	Post commissioning and continuous	TM-15 and CEM-1

Points 35-38

Pollutant	Units of Measure	Frequency	Sampling Method
Cadmium	milligrams per cubic metre	Post commissioning and yearly	TM-12
Dry gas density	kilograms per cubic metre	Post commissioning and yearly	TM-23
Mercury	milligrams per cubic metre	Post commissioning and yearly	TM-12
Moisture content	percent	Post commissioning and yearly	TM-22
Molecular weight of stack gases	grams per gram mole	Post commissioning and yearly	TM-23
Nitrogen oxides	milligrams per cubic metre	Post commissioning and yearly	TM-11 and CEM-2
Oxygen	percent	Post commissioning and yearly	TM-25
Solid Particles	milligrams per cubic metre	Post commissioning and yearly	TM-15 and CEM-1
Sulphuric acid mist and sulphur trioxide	milligrams per cubic metre	Post commissioning and yearly	TM-3
Temperature	degrees Celsius	Post commissioning and yearly	TM-2
Total Fluoride	milligrams per cubic metre	Post commissioning and Yearly	TM-9
Hazardous substances (Type 1 and type 2 substances in aggregate)	milligrams per cubic metre	Post commissioning and Yearly	TM-12, TM-13 & TM-14
Velocity	metres per second	Post commissioning and Yearly	TM-2
Volumetric flow rate	cubic metres per second	Post commissioning and yearly	TM-2 and CEM-6

13. The selection of sampling positions shall be carried out in accordance with test method TM-1.

Performance Monitoring

14. Within 90 days of commencement of operation of each stage of the ceramic tile manufacturing facility (stages 5-8) and during a period in which the facility is operating under design loads and normal operation conditions, the proponent shall undertake a program for point source emission testing on each stack as described in condition 12 and undertake dispersion modelling for PM₁₀ and fluoride (as hydrogen fluoride) to confirm the air emission performance of the facility. The program shall meet the requirements of the DECCW. For all stages, the proponent shall confirm the results of the predictions made in the air quality impact assessment of the document 'National Ceramic Industries Australia – Environmental Assessment' prepared by AECOM and dated July 2010.

Stack Discharge Design Requirements

15. The design parameters for each discharge point identified in the table below shall meet the requirements specified in that table. All stacks shall be designed, constructed, operated and maintained in accordance with good engineering practice in order to minimise the effects of stack tip downwash and building wake effects on ground level air pollutant concentrations.

Discharge Point	Minimum Stack height (m)	Minimum Stack discharge velocity (ms ⁻¹)	Maximum Stack diameter (m)
25	32	15.8	1.0
26	32	11.9	1.0
27-30	18	10.2	0.5
31	32	12.1	1.0
32	14	2.8	0.5
33 and 34	32	21.3	1.4
35-38	24	16.6	0.8
39-42	16	26.9	1.0

Grape leaf monitoring²

16. The proponent must monitor the impact of fluoride on vegetation as follows:

- (a) Annual and quarterly visual assessment of vegetation in the area surrounding the premises as outlined in the document titled *Proposed Ambient Air Quality Monitoring Programs – National Ceramic Industries Australia, Rutherford* dated January 2004; and
- (b) Quarterly monitoring of the fluoride content in vegetation in the area surrounding the premises as outlined in the document titled *Proposed Ambient Air Quality Monitoring Programs – National Ceramic Industries Australia, Rutherford* dated January 2004.

The proponent must maintain a list and a map of the monitoring sites used to assess the impact of the premises on the surrounding environment. Part of each sample analysed must be carefully stored to the satisfaction of the Director General for a period of not less than 12 months as forwarded to the Department of Environment Climate Change and Water on request.

NOISE

17. Noise generated at the premises shall not exceed the noise limits presented in the table below. The locations referred to in **Table 17.1** below are indicated by the property identification provided in the document *National Ceramic Industries Australia – Environmental Assessment* prepared by AECOM and dated July 2010.

Table 17.1 Noise Limits³

		NOISE LIMITS dB(A)			
Receiver	Location*	Day	Evening	Night	
		L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{A1, 1 minute} Or L _{Amax}
R1	Kenvil Close – approximately 800m from the premises boundary	35	35	35	45
R2	Wollombi Road, Farley - approximately 860m from the premises boundary	35	35	35	45

- **Note:** DECCW recommends the noise monitoring locations shall be identified by Lot and DP number for enforcement purposes.

18. If residential development is approved adjacent to the proposed development, the proponent must implement all additional feasible and reasonable measures to mitigate noise impacts.

19. For the purpose of condition 17:

- a) Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sunday and Public Holidays.
- b) Evening is defined as the period 6pm to 10pm.
- c) Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sunday and Public Holidays.

² This condition is taken from EPL 11956 and is consistent with the commitment made in the EA document with regard to fluoride monitoring. The proponent commits to undertaking fluoride monitoring in accordance with EPL requirements.

³ This condition is proposed to replace condition 4.14 of consent 449-12-2002-I if the consents are consolidated.

20. The noise limits set out in condition 17 apply under all meteorological conditions except for any one of the following:
- Wind speeds greater than 3 metres/second at 10 metres above ground level; or
 - Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or
 - Stability category G temperature inversion conditions.
21. For the purposes of condition 17:
- The meteorological data to be used for determining meteorological conditions is the data recorded by either a meteorological station established on the premises or the meteorological weather station identified as EPA Identification Point 24 in Condition M8 in Environment Protection Licence 11956, located at Australian Waste Oil Refinery, 62 Kyle St Rutherford.
 - Stability category temperature inversion conditions are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the NSW Industrial Noise Policy.
22. For the purposes of determining the noise generated at the premises:
- Class 1 or 2 noise monitoring equipment as defined by AS IEC61672.1-2004 and AS IEC61672.2-2004, or other noise monitoring equipment accepted by DECCW in writing, shall be used;
 - The noise monitoring equipment used at a location shall be placed in a position:
 - that is, where applicable:
 - approximately on a location's property boundary that is closest to the premises, where any dwelling at the location is within 30 metres of the location's property boundary that is closest to the premises; or
 - within 30 metre of a dwelling façade where any dwelling at a location is situated more than 30 metres from the location's property boundary that is closest to the premises; or
 - within approximately 50 metres of the boundary of a National Park or a Nature Reserve.
 - in order to determine compliance with the $L_{eq(15 \text{ minute})}$ noise limits in condition 17; or
 - that is within 1 metre of a dwelling façade at a location to determine compliance with the $L_{A1(1 \text{ minute})}$ noise limits in condition 17; and
 - that is:
 - at the most affected point at a location where there is no dwelling at the location; or
 - at the most affected point within an area at a location prescribed by conditions 21(b)(i) or 21(b)(ii).
23. A breach of the approval will still occur where noise generated from the premises in excess of the appropriate limit specified in the condition 17 is detected:
- in an area at a location other than an area prescribed by conditions 21(b)(i) or 21(b)(ii); and/or
 - at a point other than the most affected point at a location.
24. For the purposes of determining the noise generated at the premises, the modification factors in Section 4 of the NSW Industrial Noise Policy shall be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.

WATER

25. Except as may be expressly provided by a licence under the *Protection of the Environment Operations Act 1997* in relation of the development, section 120 of the *Protection of the Environment Operations Act 1997* shall be complied with in connection with the carrying out of the development.

26. Soil and water management controls must be employed to minimise soil erosion and the discharge of sediment and other pollutants to lands and/or waters during construction activities in accordance with the requirements outlined in *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004).

ABORIGINAL CULTURAL HERITAGE

27. The applicant must consult with the local Aboriginal community in a fair and equitable way during the development and involve Aboriginal representatives for the project, in the ongoing management of Aboriginal Cultural Heritage values.
28. If Aboriginal cultural objects are uncovered due to the development activities, all works must halt in the immediate area to prevent any further impacts to the object(s). A suitably qualified archaeologist and Aboriginal community representatives must be contacted to determine the significance of the object(s). The site is to be registered in the AHIMS (managed by DECCW) and the management outcome for the site included in the information provided to the AHIMS. It is recommended that the Aboriginal community representatives are consulted in developing and implementing management strategies for all sites, with all information required for informed consent being given to the representatives for this purpose.
29. All reasonable efforts must be made to avoid impacts to Aboriginal Cultural Heritage values at all stages of the development works. If impacts are unavoidable, mitigation measures are to be negotiated with the Aboriginal community and DECCW.
30. An Aboriginal Cultural Education Program must be developed for the induction of personnel and contractors involved in the construction activities on site. The program should be developed in collaboration with the Aboriginal community.
31. If human remains are located during the project, all works must halt in the immediate area to prevent any further impacts to the find or finds. The NSW Police, the Aboriginal community and DECCW are to be notified. If the remains are found to be of Aboriginal origin and the police consider the site not an investigation site for criminal activities, DECCW should be contacted and notified of the situation and works are not to resume in the designated area until approval in writing is provided by DECCW. In the event that a criminal investigation ensues works are not to resume in the designated area until approval in writing from the NSW Police and DECCW.

WASTE

32. Hazardous or industrial waste shall be stored and disposed of in a manner to minimise its impact on the environment including appropriate segregation for storage and separate disposal by a waste transporter licensed by DECCW.

-End-

18 August 2010