Commercial in Confidence

National Ceramic Industries Australia
2 November 2010

F I N A L

Expansion of National Ceramic Industries Australia Facility, Rutherford NSW Environmental Assessment

Submissions Report

“This page has been left blank intentionally”

Expansion of National Ceramic Industries Australia Facility, Rutherford NSW Environmental Assessment

Submissions Report

Prepared for

National Ceramic Industries Australia

Prepared by

AECOM Australia Pty Ltd
St Patrick's Commercial Centre, Queen Street, Singleton NSW 2330
T +61 2 6575 9000 F +61 2 6575 9099 www.aecom.com
ABN 20 093 846 925

2 November 2010

60163772

"This page has been left blank intentionally"

Quality Information

Document	Expansion of National Ceramic Industries Australia Facility, Rutherford NSW Environmental Assessment – Response to Submissions
Ref	60163772 NCIA Submissions Report_2Nov10
Date	2 November 2010
Prepared by	James McIntyre for Author Signature
Reviewed by	Andrew Cook for Technical Peer Reviewer Signature

Distribution

Copies	Recipient	Copies	Recipient
1	Leonardo Pereira Managing Director **National Ceramic Industries Australia** **PO Box 725** **Maitland NSW 2320**	1	AECOM File Copy
1	Chris Ritchie Manager Industry **Department of Planning** **GPO Box 39** **Sydney NSW 2001**		

Revision History

Revision	Revision Date	Details	Authorised	
			Name/Position	Signature
1	2 November 2010	Final	James McIntyre for	

"This page has been left blank intentionally"

Contents

List of Tables

Body Report

List of Figures

Body Report

List of Appendices

"This page has been left blank intentionally"

1.0 Introduction

National Ceramic Industries Australia (NCIA) submitted an Application for Project Approval under Part 3A of the *Environment Planning and Assessment Act 1979* (EP&A Act) for the expansion of their ceramic tile manufacturing facility located in Rutherford, NSW (the Project). The Environmental Assessment (EA) was on public exhibition from 15 July 2010 to 18 August 2010. During this time the public and the Government agencies were invited to provide written submissions.

AECOM Australia Pty Ltd (AECOM) has prepared this report on the EA submissions on behalf of NCIA in accordance with Section 75H of Part 3A EP&A Act.

The Department of Planning (DOP) received 322 submissions to the EA. Submissions were received from six Government agencies, two community interest groups, one interested stakeholder and three private landholders. In addition 310 submissions were received via petition on a preformatted submission letter. The Agency submissions are included in **Appendix A**.

Submissions were received from:

- Department of Environment Climate Change and Water;
- Department of Planning;
- Hunter Water;
- Maitland City Council;
- NSW Office of Water;
- Roads and Traffic Authority;
- Maitland Anti-Stink Campaign;
- Farley Investigation Area Landowners Group;
- Heritage Green (McCloy Group);
- Armstrong;
- Brown;
- Kerrigan; and
- Community petitions.

All submissions made by the community are available for download from the DOP website at:

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=3550

This report has been prepared in response to submissions received during the EA exhibition period. Input into the response to this Submission Report has been provided by specialists involved in the preparation of the EA.

"This page has been left blank intentionally"

2.0 Government Agencies

2.1 Department of Environment and Climate Change and Water

2.1.1 Conditions of Approval

DECCW Comment:

DECCW's recommended conditions of approval are specifically for Stages 5-8 of the proposed expansion.

Response:

Noted.

2.1.2 Air

DECCW Comment:

DECCW understands that the Department of Planning is considering a modification application (449-12-202-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 emissions 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.

Response:

NCIA and AECOM disagree with this assessment as the modification submitted to DOP in April to remove the 7% oxygen correction factor identified numerous reasons why a 7% oxygen correction is inappropriate for the ceramic manufacturing industry. NCIA is now in a position to respond DECCW's request for additional information relating to this matter.

A meeting was held with DECCW and DOP on the 14 October 2010 where this matter was discussed. It was agreed that the existing modification would remain on hold and the 7% or 18% oxygen correction issue could be responded to and considered as part of this Submissions Report.

The emissions from NCIA's kilns have traditionally been measured as being between 16-18% oxygen content, as evidenced in the Annual Returns submitted to DECCW and available on NCIA's website. These oxygen concentration measurements have been made during operation and optimal and efficient operation of the kilns.

To support this, attached in **Appendix B** is official written confirmation from Sacmi, the manufacturers of the ceramic tile kilns used by NCIA, that clearly specifies:

> *"we confirm that under normal operation and efficient kiln operation the kiln exhaust gasses will have an oxygen content ranging between 15-18%".*

Sacmi's correspondence references a European Commission document titled *Integrated Pollution Prevention Control – Reference Document on Best Available Techniques in the Ceramic Manufacturing Industry* (December 2006) where the standard conditions in the ceramic industry for measurement of volume flows and concentrations are clearly stated (see **Appendix B**). This document states:

- *Volume Flow (m^3/h): volume flows refer to 18% oxygen and standard rate.*
- *Concentration (mg/m^3): the concentration of gaseous substances or mixtures of substances refer to dry flue gas at 18 vol-% oxygen and standard rate, and benzene concentrations refer to 15 vol-% oxygen and standard rate.*
- *Standard Rate: standard rate refers to a temperature of 273 K and a pressure of 1013 hPa.*

Additionally, Sacmi's correspondence references an example of kiln and dryer stack measurement concentrations and measurements from ISO-STUDIO (a large ceramic tile manufacturer) where it can be seen that the oxygen concentration is consistently above 16% for kiln emissions and above 18% for dryer emissions. Sacmi have also provided a diagram showing the source of controlled air ingress into the kiln operation, which provides evidence that that the kilns are not sealed or enclosed combustion systems and that the ingress of air into the system occurs at many locations to enable the efficient operation of the kiln. Both these documents are provided in **Appendix B**.

It is clear that based on NCIA's kiln emission oxygen concentrations consistently being between 16-18% (measured and reported since 2004) and the correspondence received from Sacmi, a requirement to apply a 7% oxygen concentration correction factor is inappropriate for NCIA's operations and the ceramics industry generally.

NCIA request that the reference conditions for NOx and particulates from the kilns be set at 18% as per the evidence provided in **Appendix B** and summarised above.

It should be noted that there is no environmental impact associated with the consent and EPL moving to an 18% oxygen concentration. A change in this legislative requirement will not result in a change in the operation of the kilns at NCIA. The only change is that the consent and EPL will properly reflect optimal and efficient kiln operation.

DECCW Comment:

DECCW has reviewed the AQIA 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) 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 Appendix B.

Response:

Noted. However, AECOM and NCIA have several concerns that relate to the recommended conditions of approval. These are addressed below.

2.1.3 Greenhouse Gas Emissions

DECCW Comment:

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

Response:

Noted.

2.1.4 Noise

DECCW Comment:

DECCW have put forward the following noise conditions:

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 Limits[3]

		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:

a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or

b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or

c) Stability category G temperature inversion conditions.

21. For the purposes of condition 17:

a) 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.

b) 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:

(a) 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;

(b) The noise monitoring equipment used at a location shall be placed in a position:

(i) 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 $L_{eq(15\ minute)}$ noise limits in condition 17; or

(ii) that is within 1 metre of a dwelling façade at a location to determine compliance with the $L_{A1(1\ minute)}$ noise limits in condition 17; and

(iii) 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.

Response:

The draft consent conditions set by DECCW have not been established in accordance with the INP Section 9 as detailed below. Instead the methodology suggested in the Application Notes of adopting the predicted noise levels at surrounding receivers has been applied. This methodology has certain deficiencies in this situation namely:

- Condition 20 of the draft consent conditions states that the noise limits apply under all meteorological conditions (not typical meteorological conditions as required by the INP Section 9). The noise predictions in the NIA have been conducted under prevailing conditions as per the INP Section 5. Applying the meteorological conditions put forward in Condition 20 would result in predicted noise levels higher than 35 dBA at the nearest existing residential receivers under worst case temperature inversion weather conditions.

- Condition 23 states that a breach will still occur where noise generated from the premises in excess of the appropriate limit specified in Condition 17 is detected in an area at a location other than described by conditions 22 (b)(i) or 22(b)(ii). This implies that future residential areas such as Heritage Green (HG) and Farley Investigation Area (FIA) closer to the NCIA site will have the same limits as those for existing residential dwellings based on predicted noise levels at the existing residential locations. Existing residences are more remote and not subject to the same levels of industrial background noise by comparison with HG.

In a developing area, such as that surrounding NCIA, the adoption of the predicted noise criteria for proposed residences in close proximity to NCIA, which are based on residential receivers more remote from the industrial area is considered unreasonable. It is therefore recommended that:

- Conditions 22 & 23 need to be revised to apply to receivers outlined in Condition 17.
- The project specific noise criteria be applied to proposed residential receivers in HG and FIA.

2.1.5 Water

DECCW Comment:

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. 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.

Response:

Noted. Draft conditions are acceptable.

2.1.6 Aboriginal Cultural Heritage

DECCW Comment: 5.1 Issued Director General Requirements for Aboriginal Heritage

In DECCW correspondence dated 7 March 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.

Response:

The preliminary heritage assessment (Section 14.3.1 of the EA) was conducted in accordance with the *DEC (2005) Draft Guidelines for Aboriginal Cultural Heritage Impact Assessments and Community Consultation.* Specifically, these draft Guidelines identify a number of steps in the heritage assessment procedure. The first step, Step 1 – Preliminary Assessment, states that the main purpose of a preliminary assessment 'is to identify whether there are Aboriginal cultural heritage values associated with the subject site' (DEC 2005:2).

An exhaustive desktop review was undertaken (see EA Section 14.3) that identified a number of previously conducted archaeological surveys that had been conducted both within the Project site and immediately adjacent to the impacted area. No items of Aboriginal significance were identified and the area for the proposed development has been identified as an area of significant disturbance. In addition to these surveys, a number of archaeological models have been developed that identify the Project site as having little to no Aboriginal cultural sensitivity.

The Project site has also been involved in numerous consultations with members of the Aboriginal communities, both in terms of previously conducted archaeological surveys that include the Project site and separate consultation for the ongoing approvals process that dates back to 2002. The previous EIS (2002) assessment for NCIA consulted Rick Griffiths (Mindaribba Local Aboriginal Land Council [MLALC] Chairperson), a respected senior Aboriginal representative who has had ongoing proactive interest in cultural heritage issues within the Maitland/Rutherford area. No social or cultural values have at any stage been attributed to the site or the surrounding areas apart from those archaeological sites that have been identified outside of the proposed impact

area. The locations of these sites are detailed in the EA (see Table 41 of the EA) with the majority across HG and in Kyle Street, Rutherford.

The Step 1 – Preliminary Assessment guidelines goes on to state that:

> *"If following a preliminary assessment, it is determined that Aboriginal cultural heritage values are not likely to occur on the proposed development site, no further assessment is required. This conclusion, and the rationale for this finding, must be documented in the preliminary information and subsequent application submitted for determination.*
>
> *If Aboriginal cultural heritage values are likely to be affected by the proposal proceed to next step" (DEC 2005:3)*

The draft 2007 DEC *Part 3A EP&A Act Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* further elaborates on this stating:

> *"If following a preliminary assessment, it is determined that Aboriginal cultural heritage values or items of archaeological significance are not likely to occur on the proposed development site, no further assessment is required. This conclusion, and the rationale for this finding, must be documented in the preliminary information and subsequent application submitted for determination.*
>
> *It is noted that some areas are more likely to have Aboriginal cultural heritage values or items of archaeological significance. In these instances, Steps 2-6 should be addressed. Examples of these sites include sites in the coastal zone…others to be included after advice from DEC.*
>
> *If Aboriginal cultural heritage values are likely to be affected by the proposal proceed to next step." (DEC 2007:3)*

Therefore, given that the Step 1 Preliminary Assessment determined that Aboriginal cultural heritage values are not likely to occur on the proposed development site (the Project site), no further assessment was undertaken. This process is in accordance with the 2005 draft guidelines.

AECOM agrees with the DECCW recommendation that "*the Department of Planning condition any consent issued to ensure Aboriginal cultural heritage is managed appropriately within the development"* and has provided contingency plans within the preliminary assessment in the event of finding any Aboriginal cultural heritage items, despite the extensive evidence from numerous archaeological surveys that this is unlikely to occur. Contingency plans are provided in Section 14.3.1 of the EA for:

- Procedure on the Discovery of Archaeological Deposits, and
- Procedure on Discovery of Human Remains.

DECCW Comment: 5.2 Aboriginal community consultation

There is 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.

Response:

AECOM agrees with the recommendations of DECCW that *'the conditions of consent require a continuing fair and equitable consultation process'* if any items of Aboriginal cultural heritage significance are identified during the development works as stated in NCIA Preliminary Assessment Contingencies – Procedure on the Discovery of Archaeological Deposits (see Section 14.3.1 of the EA).

AECOM considers the extensive investigation conducted not only for the Project site but also for the adjacent areas in previous archaeological assessments and Part 3A approvals to be appropriate given the minimal archaeological sensitivity of the development area. Should archaeological deposits be identified, AECOM has recommended the active involvement of Aboriginal communities immediately to develop management strategies.

DECCW Comment: 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 Aboriginal community. The EA does not adequately discuss the survey and assessment for the extension area.

The EA discusses the low significance of the 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.

Response:

The Preliminary Heritage Assessment identifies this area as being of low to no significance. This finding is based on the numerous surveys that have been conducted for the area as well as the existing evidence of disturbance that has been documented frequently in other archaeological assessments and included in the original EIS (2002) assessment.

The Preliminary Heritage Assessment also identifies that during consultation on previous archaeological assessments and as part of the original EIS consultation that no cultural significance was attributed to the development area.

AECOM disagrees that the EA does not address how areas of low significance will be managed effectively. Page 103 of the EA states:

> *"Agreed management procedures for unexpected finds will provide an effective way to minimise project impacts on unrecorded Aboriginal cultural heritage. Therefore, the following standard procedures should be adhered to in order to manage the discovery of unexpected finds during project activities."*

The Preliminary Assessment then goes on to provides contingencies for the management of any archaeological deposits identified during the development works.

DECCW Comment: 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.

Response:

AECOM does not believe that an Archaeological and Cultural Heritage Management Plan (ACHMP) is warranted when there is no evidence of Aboriginal archaeological sites within the Project site, nor has any previous survey identified this area as having archaeological potential. This is reinforced by the *DEC (2005) Draft Guidelines for Aboriginal Cultural Heritage Impact Assessments and Community Consultation* which state:

> *"If following a preliminary assessment, it is determined that Aboriginal cultural heritage values are not likely to occur on the proposed development site, no further assessment is required. This conclusion, and the rationale for this finding, must be documented in the preliminary information and subsequent application submitted for determination.*
>
> *If Aboriginal cultural heritage values are likely to be affected by the proposal proceed to next step" (DEC 2005:3).*

Investigation and consultation during the original EIS (2002) process and previous separate cultural heritage investigations did not identify this area as having specific cultural significance. The nature of the disturbed deposits makes it unlikely that intact and *insitu* archaeological deposits would remain.

AECOM however does agree that should archaeological deposits be identified during the development works, then all works should immediately stop in that area, and consultation leading to the development of an ACHMP would be appropriate.

DECCW Comment: 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.

***Condition 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.*

Response:

AECOM agrees with this condition proposed by DECCW, however this should only be a requirement in the event of the discovery of Aboriginal archaeological deposits. AECOM has provided contingencies regarding community consultation within the EA should this occur.

***Condition 28**. If Aboriginal cultural objects are uncovered due to 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 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.*

Response:

AECOM agrees with this condition proposed by DECCW and has included this as part of the contingencies in the EA in the event of the discovery of Aboriginal archaeological deposits.

***Condition 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 & DECCW.*

Response:

AECOM agrees with this condition proposed by DECCW and has included this as part of the contingencies in the EA in the event of the discovery of Aboriginal archaeological deposits.

***Condition 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.*

Response:

AECOM agrees with this condition proposed by DECCW.

All personnel and contractors involved in construction activities on site should be provided with an induction covering Aboriginal cultural heritage. The purpose of this induction is to inform staff of the importance of Aboriginal cultural heritage and the responsibilities of the individual/company should unknown Aboriginal archaeological deposits be identified. This will include an update on the new penalty rates for knowingly and unknowingly disturbing an Aboriginal archaeological site. The induction will also demonstrate the most likely types of artefacts if encountered on the site (stone artefacts) and stress the importance of reporting all bone identified during construction works. The induction should be developed with feedback from an archaeologist specializing in Aboriginal archaeology.

***Condition 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 [sic] 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.*

Response:

AECOM agrees with this condition proposed by DECCW. At the end of the contingencies dealing the Discovery of Human Remains, Point 4 of the designated area management conditions should be changed from:

"If the remains are identified as not being human then work can recommence without delay."

to:

"Work should only recommence in the designated area once written approval has been received from the NSW Police and DECCW (and/or the DOP – Heritage Branch)."

Revised Procedure on Discovery of Human Remains

(Reproduced and modified for Section 14.3.1 of the EA)

In the event that the excavation activity reveals possible human remains during remedial activity, the following procedure is to be followed:

When suspected human remains are exposed, all excavation work is to cease immediately in the near vicinity of the find location and the Project Manager on site is to be immediately notified to allow assessment and management:

1) *An area of 50 m radius is to be cordoned off by temporary fencing around the exposed human remains site - excavation work can continue outside of this area as long as there is no risk of interference to the human remains or the assessment of human remains;*
2) *The Project Manager on site is to notify the proponent;*
3) *The Police are to be contacted at the earliest reasonable time;*
4) *Contact DECCW's Environment line on 131 555 and the Heritage Office on (02) 9873 8500; and*
5) *A physical or forensic anthropologist should be commissioned by the proponent to inspect the remains in situ (organised by the police unless otherwise directed by the police), and make a determination of ancestry (Aboriginal or non-Aboriginal) and antiquity (pre-contact, historic or modern):*
   a. *if the remains are identified as modern the area is deemed as crime scene; or*
   b. *if the remains are identified as Aboriginal, the site is to be secured and DECCW and all Aboriginal stakeholders are to be notified in writing; or*
   c. *If the remains are identified as non-Aboriginal (historical) remains, the site is to be secured and the Heritage Office is to be contacted.*
6) *The above process functions only to appropriately identify the remains and secure the site. From this time, the management of the area and remains is to be determined through one of the following means:*
   a. *If the remains are identified as a modern matter liaise with the police;*
   b. *if the remains are identified as Aboriginal liaise with the proponent, the DOP, the DECCW and Aboriginal stakeholders;*
   c. *If the remains are identified as non-Aboriginal (historical) liaise with the proponent, the DOP (Heritage Branch);*
7) Work should only recommence in the designated area once written approval has been received from the NSW Police and DECCW (and/or the DOP – Heritage Branch).

2.1.7 Threatened Species

DECCW Comment:

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

Response:

Noted.

2.1.8 Waste

DECCW Comment:

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. DECCW has recommended standard waste conditions of approval for consideration in Attachment B.

Response:

Noted. Draft conditions are considered acceptable.

2.1.9 Land use Conflict

DECCW Comment:

DECCW considers it not unreasonable that National Ceramic Industries Australia be expected to incorporate all feasible mitigation measures in the current application for the proposed expansion.

Response:

NCIA propose to implement all feasible and reasonable mitigation measures, in respect to air quality and noise, in the current application for the project. NCIA has interpreted this as meaning that the predicted impacts are not dissimilar to that already approved by their existing consent and Environment Protection Licence (EPL). The two key areas of concern are air quality and noise amenity.

Best practice air quality mitigation measures have been proposed as part of the EA (i.e. fabric filter baghouses) which have proven to be effective at keeping particulate and fluoride emissions below NCIA's licence criteria.

Section 2.3.2 of this Submissions Report addresses PM_{10} and addresses fluoride emission exceedances. In each of these sections, contemporaneous air quality assessments are presented that are in accordance with the DECCW Approved Methods. The outcomes of these two assessments show:

- Between zero and one additional exceedance of the DECCW criteria for PM_{10} at the most affected receiver (receiver location 22 in the EA, HG east receptor); and
- Zero additional fluoride exceedance of the DECCW criteria at the most affected receiver (receiver location 22 in the EA).

In relation to noise, noise contour maps are provided in Appendix E of the EA and they show predicted noise levels from the operation of the Project are significantly below the project specific noise criteria at all existing residential locations under calm and prevailing weather conditions. **Figure 10** of the EA shows the predicted night time noise contours from the approved 2002 EIS for comparison with those for the Project. It can be seen that the noise contribution from the Project is approximately equivalent to that approved for the existing facility. This implies that the noise mitigation measures proposed as part of the EA include all the reasonable and feasible mitigation measures available.

With regard to the above, additional noise mitigation measures have been investigated and recommendations made as part of this Submissions Report, which include improved noise attenuation of the Mill and Spray Dryer section of the new factory building. These assessments and recommendations are presented in **Section 2.6**. These assessment show that following the implementation of the additional noise mitigation measures, the noise contribution for the Project is predicted to be similar to that of the existing facility (Stages 1 and 2).

2.1.10 DECCW Recommended Conditions of Approval

DECCW Comment:

DECCW Recommended Conditions of Approval

Response:

DECCW have provided Recommended Conditions of Approval in Attachment B of their submission to the EA. A meeting was held with DECCW and DOP on the 14 October 2010 to discuss these recommendations. **Table 1** summarises the discussions at this meeting.

Table 1: DECCW Recommended Conditions of Approval

DECCW Condition	NCIA Response
Administrative Conditions	
1	No objection and acceptable.
2	No objection and acceptable.
3	No objection and acceptable.
Air	
4	No objection and acceptable.
5	No objection and acceptable.
5	No objection and acceptable.
6	No objection and acceptable.
7	No objection and acceptable.
8	No objection and acceptable.
9	No objection and acceptable.
10	1. Reference conditions that include 7% oxygen have been inappropriately applied to all monitoring points and all measured pollutants. This is a deviation from the existing conditions where 7% oxygen reference conditions are only applied to nitrogen oxides and particulates from kiln stacks, which correspond to points 35-38. It is requested that the 7% oxygen correction factor reference conditions be removed from the consent based on the information provided in **Section 2.1.2** of this Submissions Report. 2. No averaging period or reference conditions are included for hazardous substances. It is requested that these be included.
11	No objection and acceptable.
12	1. Continuous monitoring of volumetric flow rate and solid particulates has been recommended for all monitoring locations other than the kilns (Points 25-34 and 39-42, see page 11 of the DECCW submission in **Appendix A**). This is considered extremely onerous and should be modified to annual monitoring to be consistent with that required for the approved development and existing requirements. It is noted that for kiln emission points that annual monitoring has been recommended for volumetric flow rate and solid particulates. It is requested that this annual requirement (as opposed to continuous) be applied to all other monitoring points. 2. Continuous monitoring methods have been recommended for nitrogen oxides (CEM-2) solid particulates (CEM-1) and volumetric flow rates (CEM-6) from emission points 35-38. It is requested that these onerous sampling methodologies be removed, and that sampling methodologies be applied that are consistent with the existing requirements for the approved development.
13	No objection and acceptable.
14	It has been recommended that upon commencement of operation of each new stage of the development's point source emission testing be undertaken to confirm the performance of the facility. NCIA agree to this part of the recommendation. Additionally, DECCW recommend that dispersion modelling for PM_{10} and fluoride be undertaken upon the commencement of each new stage of the operation. It is requested that this condition be reworded to state that if the point source emissions testing shows the new stage of the development to be compliant with the proposed licence conditions, then dispersion modelling is not needed as the modelled predicted impacts would be less than that identified in EA. This condition should only request additional dispersion modelling if the point source emissions testing is found to exceed the proposed licence conditions.

DECCW Condition	NCIA Response
15	No objection and acceptable.
16	The title of this condition should be reworded to read “Fluoride Monitoring’ as per the existing consent, or ‘Vegetation Monitoring’ which more accurately describes the existing work undertaken to comply with this condition.
17	1. Condition 17 is addressed in **Section 2.1.4** of this Submissions Report. 2. This condition is requested to be reworded to read “NCIA’s noise contribution shall not exceed the noise limits presented in the table below”. It is considered that DECCW’s proposed wording is unclear in its intent. 3. In a developing area, such as that surrounding NCIA, it is considered that adoption of predicted levels is not seen as reasonable and it is recommended that project specific noise criteria be applied (see **Section 2.1.4**)
18	Noted. We refer to DECCW comments in Section 8 on page 6 of their submission and suggest that they should be included in Condition 18 to identify a shared responsibility between NCIA and Heritage Green (HG) in ensuring appropriate noise mitigation measures are provided across HG.
19	No objection and acceptable.
20	Condition 20 is addressed in **Section 2.1.4** of this Submissions Report.
21	No objection and acceptable.
22	Conditions 22 and 23 combined seem to imply that future residential areas such as HG and FIA closer to the NCIA site will have the same limits as those for existing residential dwellings which are more remote from the NCIA site based on predicted noise levels at these existing residential locations. This interpretation is extremely onerous for NCIA and will result in non-compliance with the criteria proposed by DECCW. It is requested that Conditions 22 and 23 be worded so that they specifically relate to Condition 17 and receivers R1 and R2. It is recommended that the project specific noise criteria that are detailed in the EA be applied at HG. Additionally it is recommended that the wording of Conditions 22 and 23 be amended to accurately reflect that they specifically relate to receivers R1 and R1 in Condition 17.1.
23	
24	No objection and acceptable.
25	No objection and acceptable.
26	No objection and acceptable.
27	AECOM agrees with this condition proposed by DECCW, however this should only be a requirement in the event of the discovery of Aboriginal archaeological deposits. AECOM has provided contingencies regarding community consultation within the EA should this occur. AECOM considers the extensive investigation conducted not only for the Project site but also for the adjacent areas in previous archaeological assessments and Part 3A approvals to be appropriate given the minimal archaeological sensitivity of the development area. Should archaeological deposits be identified, AECOM has recommended the active involvement of Aboriginal communities immediately to develop management strategies. Additional information regarding consultation is provided in **Section 2.1.6** of this Submissions Report.
28	These recommend conditions of consent are addressed in **Section 2.1.6** of this Submissions Report.
29	
30	
31	

DECCW Condition	NCIA Response
32	No objection and acceptable.

2.2 Hunter Water

2.2.1 Water Supply and Wastewater Transportation

Hunter Water Comment:

There are current limitations within the system to service this development. However, Hunter Water's forward capital program will provide capacity when completed in 2011/12.

There are capacity limitations in the wastewater system however this is not likely to be an issue.

Hunter Water has no objections to the proposed application; however the developer should continue to liaise with Hunter Water regarding the development.

Response:

Noted. NCIA will continue to correspond with Hunter Water with regards to the timing of the Project.

2.3 Maitland City Council (MCC)

2.3.1 General

MCC Comment:

While Council does not object to the principle of the proposed expansion of the NCIA plant and recognises the potential economic benefits of the expanded output for the Maitland LGA, the following issues \ comments warrant careful consideration by the Department in its assessment of the application.

Response:

Noted.

2.3.2 Air Quality

MCC Comment:

The Air Quality Impact Assessment provided with the EA does not map the Scenario 1 PM_{10} GLC contours so it is difficult to gain a full appreciation of the spatial difference in the PM10 GLC impacts between the 'as approved' and 'as proposed' development scenarios.

Response:

Scenario 1 is provided for baseline analysis purposes only. Scenario 2 isopleths (contours) were plotted as they are the primary subject of the assessment.

MCC Comment:

The application provides no detail as to specific options to mitigate the increase in PM_{10} GLC's which is indicative of higher particulate discharge from the stacks.

Response:

NCIA currently use industry standard baghouse dust collectors to mitigate particulate and fluoride emission from their operations and these are proposed to be implemented as an integral component of the Project. The recently submitted Air Quality Mitigation Study (AQMS, AECOM 2010) has shown the air quality performance of the NCIA facility is below the prescribed limits. The same industry standard baghouse dust collectors would be used to mitigate particulate and fluoride emission from the Project.

DECCW has provided recommended conditions of approval, which outline strict pollution emission concentration limits similar to existing conditions and NCIA commits to meeting these limits.

MCC Comment:

In an effort to ensure that air quality is maintained at least to current levels, Council requests that the Minister prior to the determination of the application, require the applicant to provide a detailed investigation of mitigation measures to reduce particulate stack emissions with a view to limiting PM_{10} 24hr average GLC exceedances to those under the Scenario 1 modelling.

Response:

It is acknowledged that some 24 hour PM_{10} exceedances were predicted across the proposed HG development. These were predicted as a result of the identification of this area as residential (despite being a golf course). Exceedances of PM_{10} criteria were clearly identified in the approved 2002 EIS prepared for the existing NCIA facility. The EA concluded that "In relation to PM_{10} it can be considered that the impacts of the Project are consistent with those predicted in the 2002 EIS". PM_{10} predictions in the EA suggest the potential for cumulative impacts under worst case conditions to be above the DECCW criteria. These impacts are due to elevated background concentrations (which are approaching or above the DECCW assessment criteria). However, cumulative PM_{10} impacts from the project are not expected to be distinguishable from the existing tile plant's impacts and are not considered to be of concern.

Additional analysis of the PM_{10} data predicted by the dispersion modelling was undertaken following the identification of potential exceedances of the DECCW criteria. In accordance with the DECCW Approved Methods, a contemporaneous assessment of the predicted PM_{10} concentrations was undertaken to determine the number of additional exceedances expected as a result of the operation of the NCIA expansion. Data sourced to allow the examination of the contemporaneous predictions were as follows:

- 2004 PM_{10} monitoring data for NCIA (6 day HVAS data from March until December 2004);
- 2004 Continuous TEOM data sourced from DECCW monitoring sites at Wallsend and Beresfield; and
- Predicted ground level PM_{10} concentrations at the NCIA property boundary (corresponding to the location which reported the highest predicted concentration of 10.8 $\mu g/m^3$) from the EA.

The data from Wallsend and Beresfield were used as there is only limited data available from NCIA to undertake a contemporaneous assessment. Initially the Wallsend and Beresfield data were compared with the NCIA data to determine the applicability of data from these sites for further analysis. Applicability was determined by examining the percentage of exceedances of the PM_{10} assessment criteria.

Results of the analysis showed that the Beresfield data with its proximity to major road works and the junction of the F3 Freeway, the Pacific Highway and the New England Highway had double the rate of exceedances when compared to NCIA (29% for Beresfield as compared with 12% for NCIA) whereby the Wallsend data had a similar rate of PM_{10} criteria exceedances (14% for Wallsend as compared to NCIA of 12%). On this basis, the Wallsend data has been used along with the NCIA data for the contemporaneous assessment.

The number of exceedances without the influence of NCIA, the number of exceedances including the influence of NCIA and the maximum cumulative concentrations for the NCIA and Wallsend data sets are shown below in **Table 2**.

Table 2: Predicted Additional PM_{10} Exceedances

Data	Without the Influence of NCIA		Including the Influence of the NCIA Facility (the Project)		
	Number of Monitoring Data Exceedances Per Year	Percent Exceedances	Number of Additional Exceedances	Max Cumulative Contemporaneous Concentration	NCIA Predicted at Max Concentration
Wallsend	47	14%	1	95.9 μg/m^3	0.4 μg/m^3
NCIA	6	12%	0	70.3 μg/m^3	10.8 μg/m^3

Note: the DECCW guideline is 50 μg/m^3

The cumulative contemporaneous predictions showing the contribution from background has also been plotted and is shown in **Figure 1** and **Figure 2** (for NCIA and Wallsend).

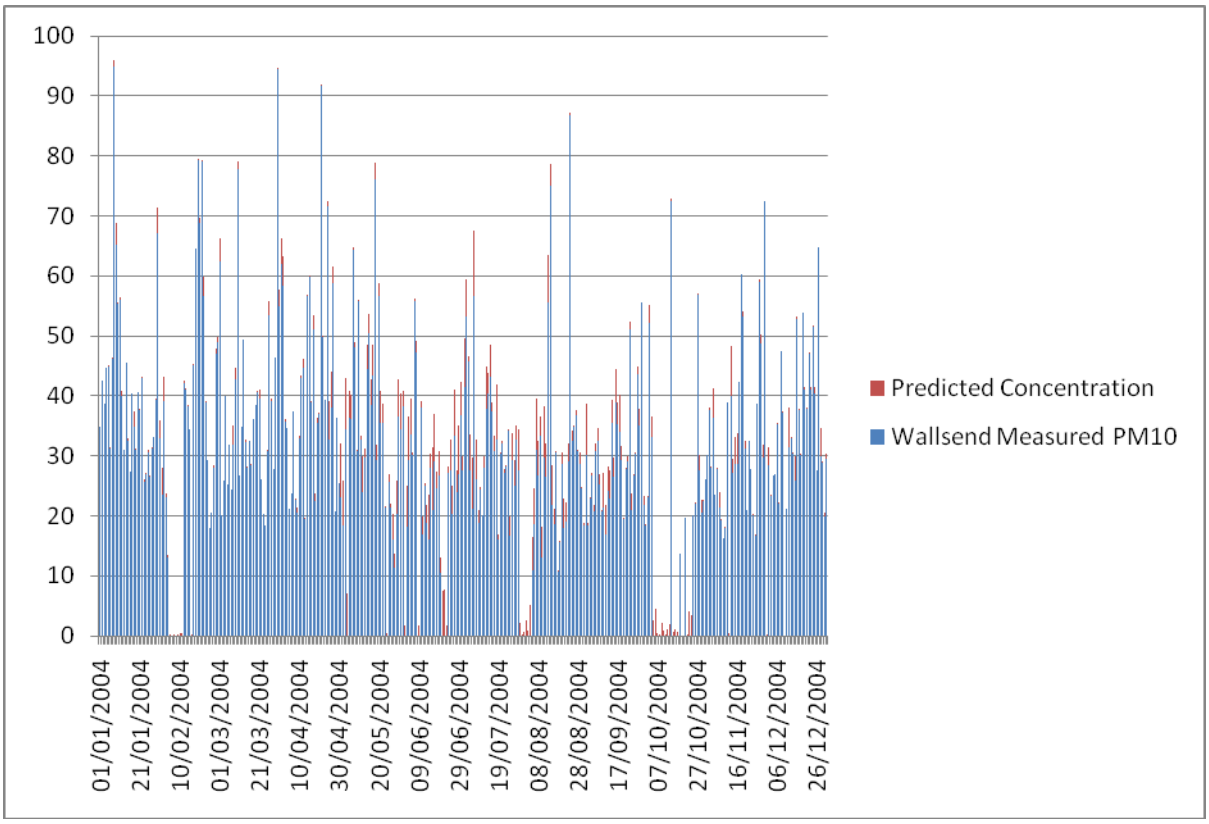


Figure 1: NCIA Background and Measured PM_{10} Concentrations, Plotted Cumulatively and Contemporaneously

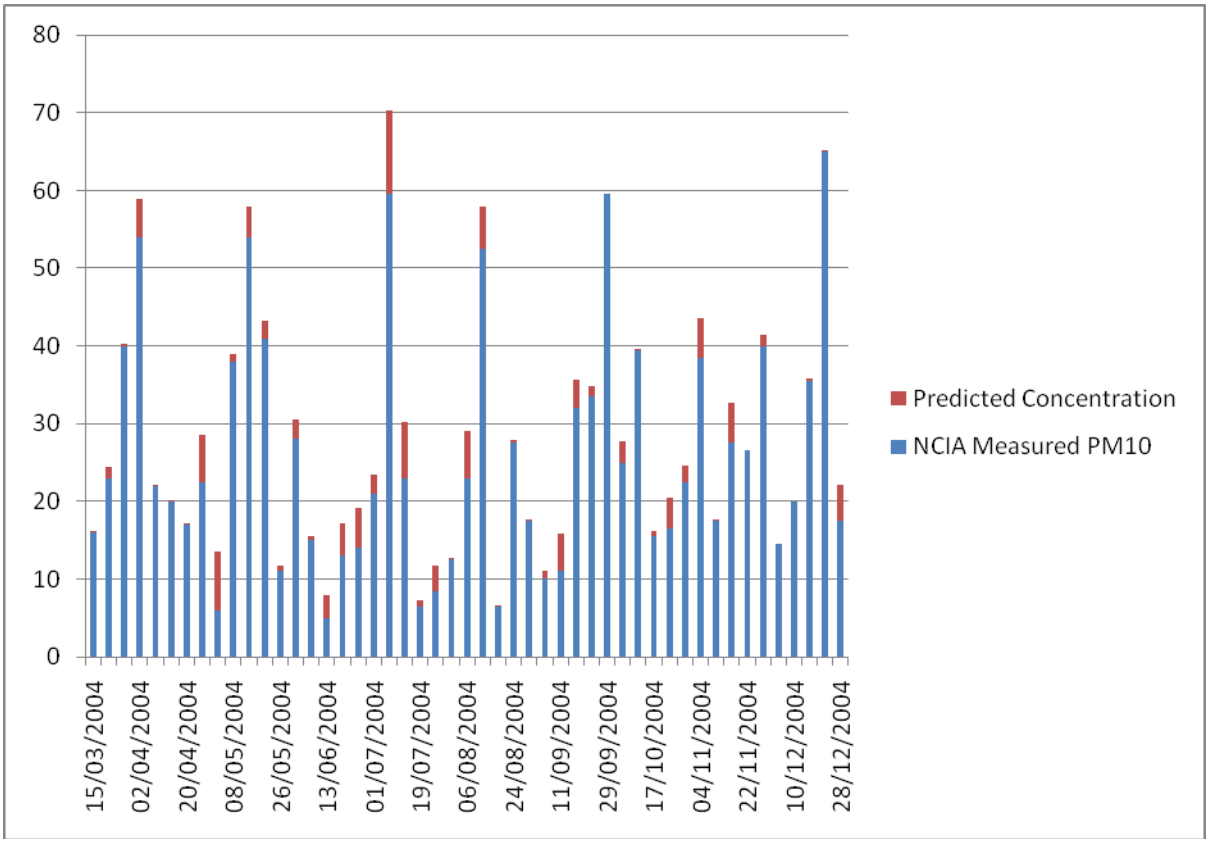


Figure 2: Wallsend Background and NCIA PM_{10} Measured Concentrations, Plotted Cumulatively and Contemporaneously

The findings of this study show that the expected influence of the Project is low with between zero and one additional 24 hour average PM_{10} exceedances expected as a result of the operation of the Project. Given the variability of the background data this slight increase in exceedances is not expected to result in a quantifiable impact on surrounding receptors.

As a result of the relatively high background data and predicted limited increase in DECCW criteria exceedances, it is seen as unreasonable and impracticable to meet the DECCW defined limits at all locations beyond the NCIA site boundary.

The PM_{10} predictions in EA suggest the potential for cumulative impacts under worst case conditions to be above the DECCW criteria due to elevated background concentrations (which are approaching or above the DECCW assessment criteria). However, cumulative PM_{10} impacts from the Project are not expected to be distinguishable from the existing facility's impacts (as evidenced by between zero and one additional 24 hour average PM_{10} exceedances expected as a result of the operation of the Project) and are not considered to be of concern.

The recently submitted AQMS has shown air quality performance of the existing NCIA facility is below the prescribed limits and that the contribution of NCIA to the background is relatively limited beyond the site boundary. The study demonstrated compliance with the 20mg/m^3 licence limit for particulates with the following measured results:

Kiln 1: 6.8 mg/m^3 (5 March 2010);

Kiln 2: 11 mg/m^3 (27 November 2009); and

Spray Dryer: 5.8 mg/m^3 (9 February 2010).

MCC Comment:

Any development consent should also retain a condition requiring detailed on-site and off-site monitoring of vegetation for HF impacts.

Response:

Noted. DECCW has proposed such a condition and NCIA accepts the requirement to monitor vegetation for HF impacts.

2.3.3 Noise

MCC Comment:

The acoustic report in the EA goes to some lengths to describe the various stages of the tile manufacturing process but fails to properly identify the specific sources of noise generation from the plant. This is particularly important in understanding the type of noise and/or its tonal characteristics above and beyond the volume of the noise. For example, a significant noise generator is the discarding of faulty tiles into the disposal bins in the southern section of the site the characteristics of this noise (as the tiles are being dropped into a steel bin and then when being loaded into a truck for transport off-site) is very different to the constant running of an extraction fan. A discussion of noise types and the potential for some noise sources to be more 'offensive' than others should be addressed.

Response:

The modifying correction factors that account for certain characteristics such as tonality, impulsiveness, intermittency, irregularity or dominant low frequency content that can cause greater annoyance (as outlined in the INP Section 4) have been applied where these characteristics are considered to be present in noise sources for the existing and proposed operation (the noise model identified approximately 75 noise sources and these correction factors were applies where relevant). An example is for the reversing alarms (section 7.2 of the NIA) where a + 5dBA penalty has been applied to account for tonality.

MCC Comment:

While the INP does not require acoustic impacts from railways to be taken into account, the proposed Maitland-to-Minimbah Third Rail proposal is nevertheless a very likely development outcome that will have potentially a significant impact on the acoustic amenity of the area. A discussion of the cumulative impacts of operational noise from the NCIA expanded plant and the railway activity should be addressed.

Response:

The cumulative impact of industrial noise in the vicinity of the Project has been addressed within the Noise Impact Assessment (NIA) (Appendix E of the EA). Existing industrial noise in the vicinity of the project has been measured and utilised in determining the relevant project specific noise criteria.

With regard to the Third Rail Project, the INP provides no requirement to assess the cumulative impact of these railway noise sources with industrial-type sources. Road and rail sources are assessed under separate noise policy and guidelines.

2.3.4 Section 94A Levy

MCC Comment:

Council has reviewed the applicants comments in regards to the Section 94A levy and does not agree with the argument provided. As, such Council requests that the Minister levy a Section 94A contribution as part of the consent....As previously stated, the levy is 1% of the total cost of the development and is required to be paid prior to the issue of a Construction Certificate.

Response:

The EA addresses the issue of Section 94A contributions (see Section 4.9.6 of the EA).

Section 94A contributions are defined in the *EP&A Regulation 2000* (the Regulation) which states that developments in excess of $200,000 are liable for the maximum 1% levy on the total cost of the development (as stipulated in 25K of the Regulation).

The EA discloses that the Project has an estimated total cost of approximately $65 million. It is considered that a maximum development levy of $650,000 would be excessive and would not be fair and reasonable in this instance for the following reasons:

- The EA provides a detailed traffic analysis (see Section 11 of the EA) that shows the increase in traffic due to the Project will not unduly impact on the local road network and the local road network does not require any upgrades or modifications;
- The EA and this Submissions Report provides a detailed stormwater / surface water analysis (see Section 12 of the EA and **Section 4.9** of this Submissions Report) that demonstrates the proposed modified onsite stormwater management system is effective in attenuating the developed site peak discharge and on average keeps the peak site stormwater discharge at or below the sites pre-development levels. As a result it is not expected that the MCC would incur expenses to upgrade or modify council owned stormwater management infrastructure;
- The proposal is for an expansion of an existing industrial development which will create approximately 70 additional employment positions. This type and scale of development will not place significant demand on local infrastructure; and
- Utility services such as natural gas, electricity and water are provided to NCIA by service providers outside of the MCC and it is not expected that as a result of the Project any upgrades to the infrastructure supplying utilities to NCIA would need to be provided.

For these reasons, it is not expected that as a result of the Project MCC would incur any significant additional costs, nor would the local community be disadvantaged or be required to carry the cost of infrastructure upgrades. As a result it is considered that a 1% levy would be excessive.

2.3.5 Car parking

MCC Comment:

It is considered that the proposed number of car parking spaces (70) can accommodate the car parking demand generated by the site and that a variation to the DCP chapter is considered to be justified. It is further advised that if the number of employees per shift rises, further car parking analysis should be undertaken to ensure that the number of spaces can match the increased number of employees.

Council also advises that the Maitland Citywide Development Control Plan: Chapter – Car parking contains enhanced requirements to the Australian Standards relating to car park dimensions and aisle widths which should be complied with as part of the consent.

Response:

Noted.

2.3.6 Farley Investigation Area

MCC Comment:

If the maximum daytime noise threshold of 35dB(A) is maintained under a new consent then the proposed development appears to have some impact on the site, particularly in regards to noise as the 35dB(A) contour encroached over the northern property boundary most noticeably under a temperature inversion conditions and under north-west wind conditions. However, it is noted that the railway line provides potentially a greater noise source to the Farley Investigation Area and the rail noise and vibration issue is undergoing further investigation as part of the rezoning process. As previously mentioned the cumulative relationship between rail noise (existing and proposed) and operational noise from the expanded tile manufacturing plant has not been discussed in the EA.

Response:

The cumulative impact of industrial noise in the vicinity of the project has been addressed within the NIA (Section 7.1.4 of Appendix E of the EA). Existing industrial noise (i.e. cumulative noise from NCIA and the surrounding area) in the vicinity of the project has been measured and utilised in determining the relevant project specific noise criteria.

With regard rail noise, the INP provides no requirement to assess the cumulative impact of these sources with industrial-type sources. Rail sources are assessed under separate noise policy and guidelines. Rail noise which is a short term impact and operational noise is continuous impact. Therefore these different noise sources cannot be assessed cumulatively due to their differing frequency, duration of influence and measurement criteria.

2.3.7 Heritage Green (HG)

MCC Comment:

Council are currently under receipt of Development Application No. 08-2357 which proposed the development of approximately 440 lots for the purpose of accommodating dwellings and integrated outdoor private recreation spaces on the adjoining Heritage Green (HG) site to the east of the NCIA site. This application is currently undetermined....

Although the existing DA 08-2357 is not strictly a matter for consideration under Section 79C of the EP&A Act the minister should ensure that proper consideration is given to the relationship between the NCIA expansion and the type of development contemplated for the HG site under the provisions of clause 52 of the LEP and the extent to which NCIA should be required to mitigate against the acoustic and air quality impacts of the development.

Response:

Clause 52 (2) of the Maitland LEP (1993) states:

> *2) Despite any other provision of this plan, a person may, with the consent of the consent authority:*
>
> *(a) erect not more than 450 dwellings in a maximum of 6 community parcels, on the land to which this clause applies, and*
>
> *(b) carry out on the land development for commercial purposes or retail purposes, or both.*

It is evident that the wording of Cause 52(2) of the Maitland LEP (1993), by using the word 'and' to link subclauses (a) and (b), requires the proposed development (i.e. HG) to include both components (450 dwellings and commercial/retail development which is an integral part of a major tourist recreation facility, being a golf course). As the proposed residential subdivision does not include a golf course or other retail\commercial that is an integral part of a golf course, the residential subdivision cannot be dealt with as a standalone part of the development. The residential subdivision in isolation from the golf course is inconsistent with the intent of Clause 52(2) as it currently stands. The rezoning of the site through Amendment No75 to LEP 1993, was based on a master plan that included the development of an 18 hole golf course plus associated residential/commercial development. The current HG proposal has abandoned this fundamental component of the master plan that was used to justify and support the rezoning.

The effect of Clause 52(2) is to entitle a person, with the consent of the council, to erect up to 450 dwellings (in a maximum of six community parcels) and carry out development for commercial and/or retail purposes. However, subclause (2) of Clause 52 must be read in conjunction with subclause (3). There is an imposition imposed on the Council not to grant consent unless it is satisfied of three matters, including that the commercial or retail component of the proposed development is required as an integral part of a major tourist recreational facility, being a golf course. The issue is that there no longer exists an integrated major tourist recreational facility being a golf course as this has been removed from the development application. The Council therefore cannot grant consent to the proposed development as subclause (3) cannot be satisfied as there is no longer a 'major tourist recreational facility'. The HG development application or SEE has not included an adequate analysis of the matters provided for in subclause (4)(a) or provided a description of the measures to be undertaken to guard against the potential disturbances from industrial development and whether those measures are satisfactory as prescribed by subclause 4(b).

It is considered that the Council is prohibited from granting consent due to the absence of a commercial or retail component as an integral part of a major tourist recreational facility being a golf course. Additionally, the Council is prohibited from granting consent unless, as prescribed by subclause 52(4) of LEP 1993, it has considered:

a) an analysis of noise and air quality associated with industrial activity, **and**

b) an assessment of any changes likely to result from the proposed development on these considerations, **and**

c) it has also considered the measures to be undertaken to guard against actual and potential developments.

MCC must be satisfied that the actual and potential issues of noise and air quality have been addressed. HG is obliged by reason of clause 52(4) of the LEP to address proposed industrial development in its analysis of noise and air quality and to provide a description of the measures to be undertaken to guard against potential disturbances from such development. In carrying out its consideration, the Council must take into account

proposed industrial developments including NCIA's approved additional two lines and the Part 3A application it has made, particularly given one of the objectives of the LEP is to encourage functional and economically viable industrial development.

We have a number of points to make in respect of HG:

- HG represents a poor land use planning outcome by creating inevitable amenity conflicts with the Rutherford Industrial Estate;
- HG's 450 dwellings can only be undertaken in conjunction with a golf course (see Clause 52), therefore the current proposal by HG is not valid; and
- HG is required to address actual and potential noise and air quality impacts from the Rutherford Industrial Estate (Clause 52(4)) and has failed to do so in its current proposal.

Notwithstanding the above, NCIA propose to implement all feasible and reasonable mitigation measures to address noise and air quality impacts in the current application for the proposed expansion. NCIA has interpreted this to mean that the predicted impacts should not be dissimilar to that already approved by their existing consent and EPL. NCIA consider that the mitigation measures proposed represent reasonable and feasible mitigation measures that ensure the predicted impacts are not dissimilar to that already approved by their existing consent and EPL. This has been demonstrated throughout this Submissions Report (see **Section 2.6** for noise and **Section 2.3.2** and).

2.4 NSW Office of Water (NOW)

NOW Comment:

NOW has no objections to the proposal.

Response:

Noted.

2.5 Roads and Traffic Authority (RTA)

RTA Comment:

I have reviewed the information provided and consider that the traffic generated by the proposed development will not have a significant impact on traffic efficiency or road safety of the classified (State) road network.

The Hunter Regional Development Committee (HRDC) and the RTA would therefore have no objections to or requirements for the proposed expansions of the existing on-site tile manufacturing facility.

Response:

Noted.

2.6 Department of Planning (DOP)

DOP Comment:

Background data appears to have been collected whilst NCIA was still operating so confirmation needs to be given regarding whether or not the RBLs have been calculated according to the INP.

Response:

Heggies believes that the background noise levels have been correctly assessed in accordance with the Industrial Noise Policy (INP) Section 2. The difficulty in this situation is trying to minimise noise from the proponent (NCIA) (an existing 24 hour operating facility) while representing the impact of the other noise influences from the existing industrial estate. A detailed response to the selection of background monitoring locations and RBL calculations is contained in the response to HG comments **(Section 4.7)**.

DOP Comment:

Noise monitoring has been conducted at one site on the NCIA boundary (Site 4). Given the length of the building it would seem appropriate to have measured at least one additional position.

Response:

Detailed measurements of noise were carried out in and around the NCIA existing facility to determine sound power levels of plant and equipment for use in the detailed noise model for the site. The noise logger location was also used as an additional method to determine noise emissions from the site and to provide an additional calibration point for the noise model. The noise logger location (located on the south eastern boundary corner of the NCIA site) was selected to represent noise from the NCIA site without undue influence from other industrial noise sources on the Rutherford Industrial Estate. It is not considered that additional monitoring locations would have added to the accuracy of the model as other locations would have decreased the distance to additional industrial noise sources from other businesses.

DOP Comment:

It would also assist if monitoring results were available for other areas along the boundary of the Rutherford industrial estate.

Response:

The main aim of the unattended noise monitoring program in the close vicinity of the NCIA site was to determine the noise emissions from the exiting NCIA facility and to provide calibration for the noise model. The main aim of the unattended noise monitoring program in the residential areas was to determine the background noise. Monitoring in other areas along the boundary of the industrial estate would be unduly influenced by other industrial noise sources and therefore would not achieve this purpose. The background noise measurements at the nearest residential receivers were recorded in locations to minimise the effects of existing industrial noise and hence away from the Rutherford Industrial Estate boundary.

DOP Comment:

It is noted that all attended monitoring was undertaken during the day. Need confirmation that night-time noise levels are indicative of the whole Rutherford industrial area not just the influence of NCIA.

Response:

Background noise levels were measured continuously during day, evening and night-time periods over a seven (7) day period at locations representing the nearest affected receivers to the NCIA site (3 Montvale Street, 115 Regiment Road and 256 Wollombi Road). Operator attended measurements were conducted during the daytime (at the same three locations) period in order to determine the acoustic character of ambient sources and to determine the existing industrial contribution at the monitoring location so that amenity criteria can be set in accordance with the INP Section 2. As a conservative measure the industrial contribution measured during the daytime period was assumed to occur during the evening and night. As stated this is a conservative approach and would likely result in more stringent amenity noise limits.

DOP Comment:

Describe and quantify the shielding that the new building would provide over the existing building.

Response:

The proposed new building on the NCIA site provides some shielding to the existing noise sources on the site. The proposed new building forms a barrier that shields existing sources on site particularly from receivers located to the east of the site in Rutherford, the proposed HG and to a lesser extent those to the south in FIA. The manufacturing plant would be housed within a new industrial building approximately 420 m long and 120 m wide in the southern end, 55 m wide through the middle and 105 m wide at the northern end.

The highest part of the new factory building would be 26 m with a 5 degree slope to the ridge and would accommodate the mill and spray drier towards the northern end of the building. Other sections, accommodating the raw materials storage and press areas, would be up to 16 m high.

To quantify the shielding provided to the existing operation by the proposed new building an additional contour plot has been generated. This contour plot is for a scenario with the existing operation and proposed new building only i.e. without proposed noise sources (Stages 5 to 8). The contours show noise reductions of approximately 5 dBA to 6 dBA to the east of the site across HG. The contour plots for existing operation and existing operation with the new building are contained within **Appendix D**.

DOP Comment:

Describe and quantify reasonable and feasible options to reduce noise from the new building. It would be expected to be fairly detailed and likely more than one scenario. It would require new noise contours to be developed.

Response:

A comparison of the noise impact from the 2002 EIS (Figure 10 of the EA) with those for the project shows that the noise contribution from the Project (Stages 1 to 8) is approximately equivalent to that approved for the existing facility (Stages 1 to 4). This essentially means that the noise contribution of the Project would not change significantly from that already approved (i.e. the predicted noise contours across Heritage Green are very similar).

Notwithstanding this, the following additional mitigation has been considered:

Proposed Mill & Spray Dryer section of the building:

- Option 1 - increased thickness of metal sheeting to 0.48 BMT on the east façade, south façade and roof (previous assumption in noise model was 0.3 BMT) with 55 mm insulation fixed to underside of roof;
- Option 2 - south and east facades constructed of two (2) layers of 0.48 BMT metal sheeting with 150 mm cavity insulation. Roof constructed of 0.48 BMT single sheet metal with 55 mm insulation fixed to underside; and
- Option 3 - south and east facades constructed of 100 mm tilt-up concrete panels. Roof constructed of 0.48 mm BMT single sheet metal with 55 mm insulation fixed to underside.

Other additional source mitigation considered in respect of all three options outlined above:

- Existing dust extractor to be enclosed;
- Alsynite roofing on the proposed main building located only on the west section of the roof. This is assuming the roof is pitched and therefore the alsynite panelling is angled away from Heritage Green receivers to the east; and
- No alsynite panels on the east and south walls of the proposed Mill & Pray Dryer section of the building.

Alsynite panels are clear and allow natural light into buildings and are much less effective in shielding noise than standard steel sheeting.

Consideration was also given to implementing a noise barrier at the eastern site boundary. It was concluded that such a barrier would reduce noise emission levels during calm weather conditions, however the shielding effect of a barrier would reduce during adverse weather conditions, for example, during a temperature inversion. Therefore, this form of mitigation is not considered suitable for the site given that noise levels are influenced by local adverse meteorological conditions.

The above mitigation options were assessed to the receiver locations shown in **Figure 3** for calm weather conditions and compared to existing predicted levels from the previous NIA (Appendix E of the EA). Results from the mitigation assessment are provided in **Table 3**.

Figure 3: Noise Mitigation Assessment Locations

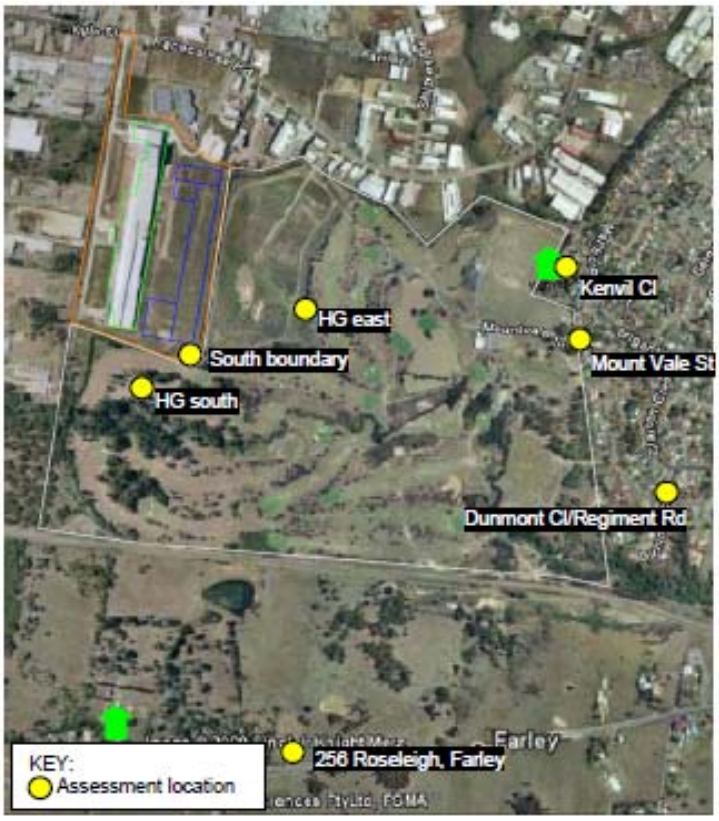


Table 3: Noise Mitigation Assessment Results

Proposed Mitigation	Predicted Leq,15-minute Noise Level dB(A) - CALM						
	256 Roseleigh Farley	Dunmont Cl / Regiment Rd	HG east	HG south	Kenvil Cl	Mount Vale St	Southern Boundary
Existing prediction (from previous NIA Appendix E from EA)	27.6	27.0	43.9	46.8	32.5	31.1	53.1
Option 1 – Proposed M&S Dryer section of Building plus Other additional source mitigation	25.8	25.2	40.7	44.4	30.1	29.0	47.2
Option 2 – Proposed M&S Dryer section of Building plus Other additional source mitigation	25.3	24.7	39.7	44.4	29.7	28.4	47.1
Option 3 – Proposed M&S Dryer section of Building plus Other additional source mitigation	25.0	24.4	39.3	44.4	29.5	28.2	47.1

Mitigation Assessment Results Summary & Discussion

Mitigation Option 1 for the proposed Mill & Spray Dryer (M&S) building section with all other additional source mitigation included provides a further reduction from existing predicted noise levels of 3.2 dB(A) for nearest HG receivers to the east, 2.4 dB(A) for nearest HG receivers to the south and 5.9 dB(A) at the southern boundary.

It is worth noting that two (2) layers of 0.48 BMT sheeting with 150 mm cavity insulation (Option 2) and tiltup concrete panels (Option 3) do provide a slightly higher level of noise attenuation in comparison to a thicker single sheet metal construction (Option 1), however the increase in noise reduction is marginal when compared to the overall predicted noise level, that is, when all existing and proposed noise sources are considered.

This is shown in **Table 3** at the HG east receiver (which is closest to this noise source), where only an additional 1 dB(A) overall reduction is achieved from Option 1 to Option 2 and 1.4 dB(A) from Option 1 to Option 3. From an environmental noise perspective, this change in noise level would be considered insignificant as it is commonly stated that a 1 to 2 dB change is typically not discernable to the human ear (NSW EPA, ECRTN, Appendix B, Section 4).

Therefore in our view, Option 2 and Option 3 are not considered ‘reasonable’ under the Definition of Terms provided in the INP due to the limited additional noise attenuation achievable beyond Option 1 and the considerable additional expense to implement these options (estimated to possibly be in excess of $750,000). .

The most effective single form of mitigation for the M&S building section was found to be the added 55 mm acoustic insulation to the underside of the roof, which has the effect of decreasing the reverberant sound pressure level inside the building which reduces noise radiating from the building facades and roof to nearby noise sensitive receivers.

Noise contours including Option 1 and the other source mitigation described above have been produced for calm and worst case adverse weather conditions (i.e. temperature inversion) and are provided as **Figure 4** and **Figure 5** to this Submissions Report. **Figures 4** and **Figure 5** are presented overlayed on the latest proposed HG subdivision lot design to provide the predicted noise impacts of the Project following additional noise mitigation measures.

It can be seen that compared to the noise contours presented in the NIA (Appendix C of the NIA) the noise contours presented in **Figure 4** and **Figure 5** of the Submissions Report demonstrate a further reduced noise impact across HG and the FIA.

Figure 4: Comparison of Predicted Existing & Mitigated Noise Levels – Calm

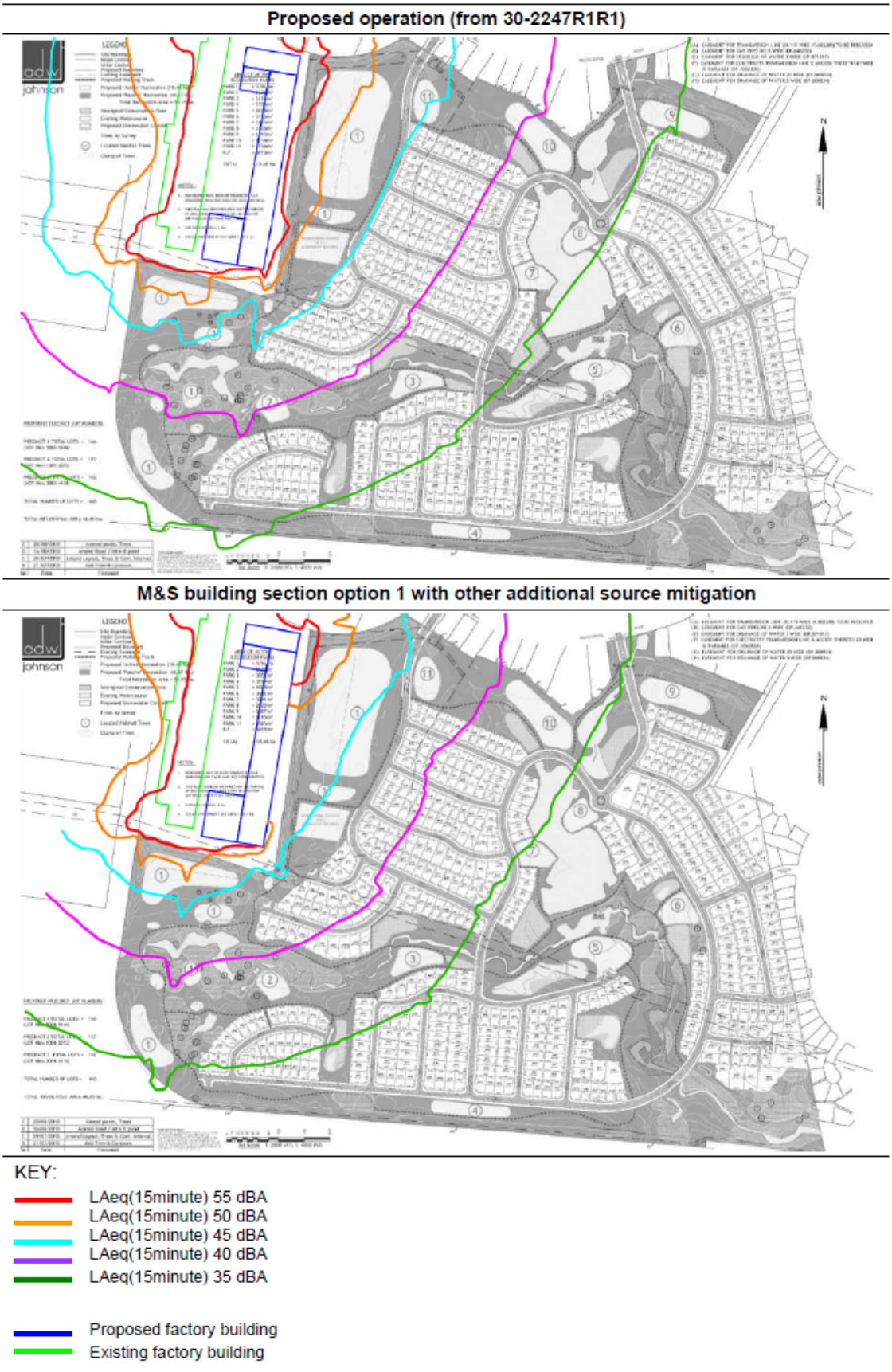
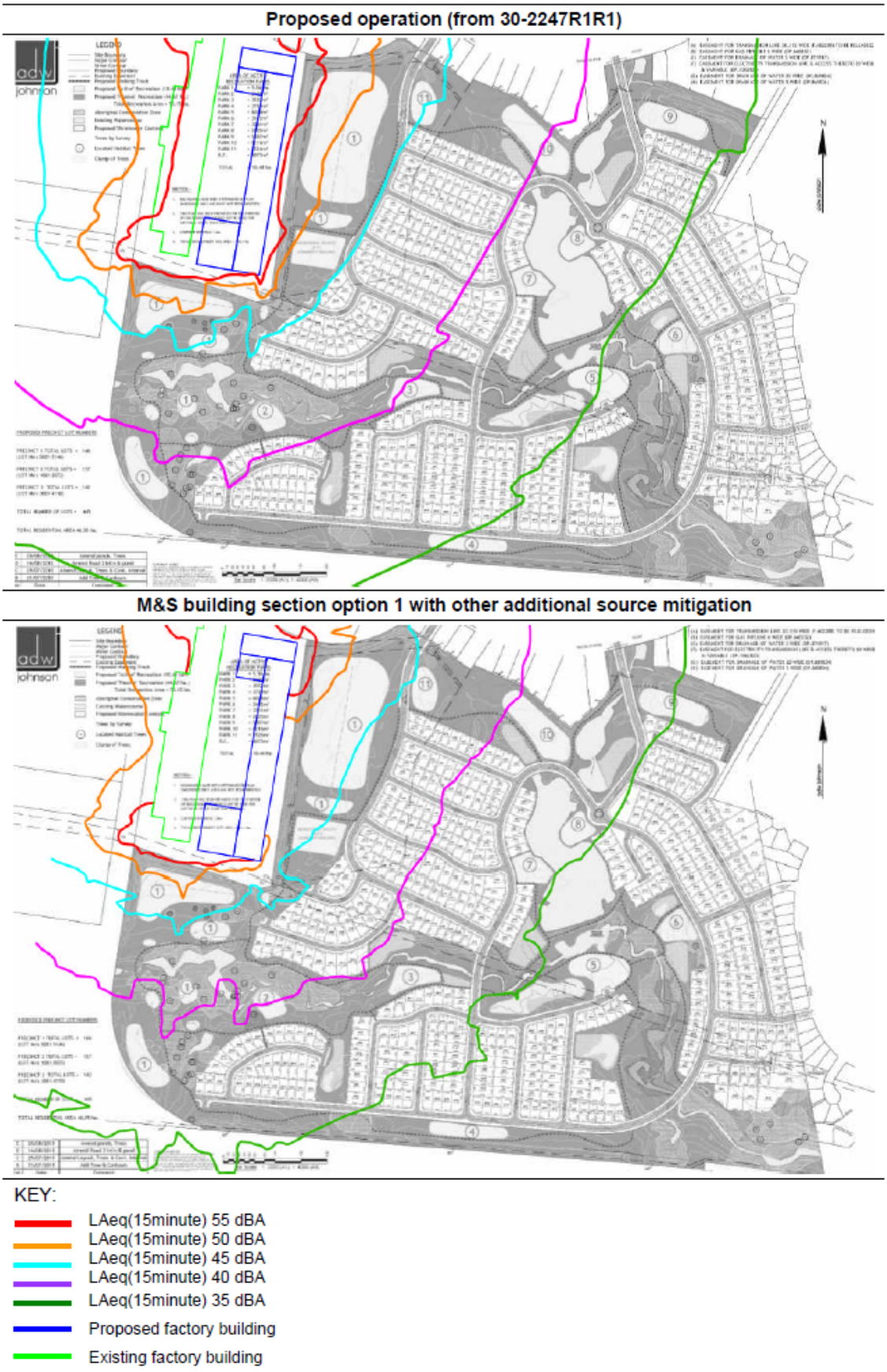


Figure 5: Comparison of Predicted Existing & Mitigated Noise Levels – Temperature inversion



3.0 Community Interest Groups

3.1 Maitland Anti-Stink Campaign (MASC)

MASC Comment:

1. Already the vast majority of air emission complaints received in NSW are from the Rutherford area.

Response:

Since operation commenced (2004), NCIA has received 6 complaints from the public relating to pollution which is an average of less than one complaint per year of operation. From this it is clear that the NCIA operation has not traditionally been seen by the public as a major cause for concern. The recently submitted AQMS (AECOM 2010) shows improved environmental operational outcomes and compliance with EPL limits.

MASC Comment:

2. There are existing air emission issues of toxins which have caused offensive odour and health impacts on neighbouring businesses and residential areas. These include respiratory problems, asthma and it seems high levels of cancer occurring in the area.

Response:

Air quality is discussed in detail in Appendix C of the EA. The EA demonstrates that the expanded NCIA facility only contributes a minor amount of particulates to the air shed compared to the existing elevated background at the closest existing residential receivers. As discussed in **Section 2.3.2**, the expected influence of the Project is low with between zero and one additional 24 hour average PM_{10} exceedances expected as a result of the operation of the project. The EA also demonstrates that the cumulative average ground level concentrations of HF (for 24hr, 7 day and 90 day averaging periods) are not exceeded at any existing residential location.

These findings and, the strict DECCW criteria applied in NSW and recently improved environmental outcomes (see AQMS 2010) would support the thesis that no causeual link between NCIA's emissions and human health impacts exists.

Fugitive odour and odour emissions were not considered by the EA, as under normal operation of the existing facility and that of the Project these types of emissions have not occurred to date and are not expected to occur.

MASC Comment:

3. NCIA has consistently demonstrated that it does not operate within the key parameters of assessing air quality impacts and consistently breaches licence conditions relating to this key condition including neglecting to monitor emissions.

Response:

NCIA is committed to meeting its stringent emissions limits and ambient air quality monitoring requirements (see Section 1.5.4 of the EA). To this end, NCIA commissioned an Air Quality Mitigation Study (AQMS) to resolve its air emission issues. The AQMS was submitted to DOP and DECCW on the 18 June 2010. The AQMS details remedial activities NCIA has actioned over the preceeding 6 months to ensure pollution concentrations associated with the existing facility are less than the prescribed limits. These mitigation actions included:

- Modification of the NCIA Kiln baghouse bag mounts to replace hard mounts with soft mounts which result in a better seal, reducing flows bypassing the bags;
- Change in the type of lime used in the baghouse to increase the percentage of Calcium available for scrubbing of HF;
- Installation of additional monitoring points to monitor baghouse operational parameters e.g. pressure drop to allow more efficient tracking of the performance of the baghouses; and
- Baghouse bag brand was changed in an effort to improve the scrubbing efficiency and the lifespan of the bags.

The AQMS and subsequent monitoring demonstrates that the implemented remedial measures have resulted in all particulate and fluoride emissions being measured below licence limits.

In relation to emissions monitoring and as a requirement of their EPL, NCIA has engaged suitably qualified air quality technicians to monitor, measure and report to DECCW and DOP on an annual basis the emissions from all identified emission sources for all stipulated pollutants. It is these results that are reported in each year's Annual Return.

MASC Comment:

4. As such NCIA has demonstrated consistently that it is unable to operate under the air emission parameters which were a key condition of development consent. NCIA is not entitled to apply for additional staged development until they demonstrate they are able to adhere to conditions related to air emissions.

Response:

The AQMS demonstrates compliance has been attained for all particulate and fluoride emissions from all sources (kilns and dryers). These conforming emission testing results are anticipated to be replicated during the 2010-11 emission testing regime.

MASC Comment:

5. The industry is situated adjacent to a large and growing residential area containing many schools, pre-schools and aged-care facilities. It is obvious that the industrial estate should not have been located so close to a residential area but since it has it should not be allowed to adversely affect the living standards of the people and groups mentioned above.

Response:

As noted above in the response to MASC comment 1, the cumulative impacts of NCIA's emissions of fluoride and particulates are minimal in existing residential areas. The EA, the additional air quality information provided in this Submission Report (refer **Section 2.3.2** and **)** and additional noise assessment presented in this Submissions Report (**Section 4.7**) demonstrate that the living standard of the nearby existing residences would not be significantly adversely affected by the Project.

MASC Comment:

6. It should be also noted that under the MAITLAND CITY L.E.P Part 5 Zone 4a General Industrial states:

(a) To ensure that industrial development creates areas which are pleasant to work in and are safe,

(b) Industrial development is allowed only if it does not adversely affect adjacent residential areas.

We feel that this expansion does not fit with either of the above parameters.

Response:

Noted.

As stated above, the EA and the additional air quality information provided in this report (refer **Section 2.3.2** and **Section 4.8**) and the additional noise assessment presented in this Submissions Report (**Section 4.7**) demonstrates that the living standard of the nearby existing residences would not be significantly adversely affected by the Project and the working conditions within the Industrial Estate would remain consistent with current conditions.

MASC Comment:

7. Noise also remains a major problem. It appears that even though noise modelling was conducted under ideal conditions, levels of 40 dBA are still expected in current residential areas and will have major impacts on future residential development. These noise levels will surely create "sleep disturbance effects" in the current and proposed residential areas.

Response:

Noise is addressed in detail in Appendix E of the EA. The noise contours presented in Appendix E, for all meteorological conditions clearly show that noise levels of 40 dBA are not predicted at any existing residential location, however noise levels may be at this level across some areas of the proposed HG site. The EA shows that sleep disturbance impacts are not predicted at any existing residential areas, however the level of affectation would also depend on the design and layout of the HG subdivision.

MASC Comment:

8. We feel the emission effects from the NCIA alone are detrimental to residents' health and well-being. Unfortunately in our area many polluting industries exist - the cumulative effect of emissions does not appear to be taken into consideration when licences are varied or approvals are given for expansions. We feel this is a grave error as residents are affected by the total level of emissions NOT the level of individual polluters.

Response:

The EA presented noise and air quality assessments that were based on a cumulative impact approach. The noise assessment did not predict any impacts, beyond what has already been approved, at any existing residential areas and additional noise mitigation is recommended in **Section 4.7** of the Submissions Report. The air quality assessment and the additional air quality information provided in this Submission Report (refer **Section 2.3.2** and) show that the adverse impacts from fluoride and particulate emissions are predicted to be minimal at existing residential areas.

3.2 Farley Investigation Area Landowners Group (FIALG)

FIALG Comment:

2.1 The EA needs to acknowledge that the entire FIA urban release area is a sensitive receptor and provide a detailed evaluation of impacts, identification of required mitigations and resultant residual impacts.

Response:

The EA provided a conservative worst case environmental impact assessment. The noise and air quality assessments have shown that the predicted impacts on the Farley Investigation Area (FIA) are minimal and not considered significant. As discussed previously, in relation to air quality, all reasonable and feasible mitigation measures have been proposed and committed to as part of the EA. The additional air quality information provided in this Submission Report (refer **Section 2.3.2** and **Section 4.8**) show that the adverse impacts from fluoride and particulate emissions are predicted to be minimal at the FIA.

It should be noted that the assessment criteria used at the FIA was residential, despite this land being considered semi-rural in nature, and no approved development application existing for the site.

In relation to noise, additional noise mitigation measures have been proposed as part of this Submissions Report. These additional measures (identified in **Section 4.7)** would further reduce the minimal acoustic impacts at the FIA. In short, the predictive noise and air quality assessments, and resulting predicted impact contours, show that the FIA is not significantly impacted by air quality or noise amenity issues.

In relation to visual impact, the visual impact assessment (see Appendix H of the EA) included three viewpoint analysis locations along Wollombi Road, which bisects through the centre of the FIA east to west. These were identification points 8, 9 and 10. The visual impact assessment also included a photomontage from view point 10. All reasonable and feasible mitigation measures relating to the predicted visual impacts have been proposed and committed to as part of the EA as submitted.

Additionally, the FIA is in excess of 1km away from NCIA to the south. This distance and the likelihood of intervening development at HG are likely to minimise the visual impact on the FIA.

FIALG Comment:

*2.2 The Director General's Environmental Assessment Requirements have not been adequately addressed in respect of the following sections (**Table 4**).* It was recommended to *require NCIA to fully comply with the DGs requirements prior to determining the proposal.*

Response:

Table 4: FIALG Review of DGRs

DG Requirement	FIALG Comment	Response
General Requirements 2: "The Environmental Assessment of the project must include detailed description of the project, including the	`*Does not provide detailed plans of the proposed building works, omissions include:* • *Specifications (e.g. weight, colour) of sheet metals*	The EA provides site layout, east and west elevations (to scale) and internal fit out figures. It is considered this level of detail is adequate for the purposes of an EA.

DG Requirement	FIALG Comment	Response
plans for any proposed building works."	*proposed for wall and roof construction* • *Appropriately scaled architectural relief drawings* • *A detailed landscaping and external lighting plan.*	Detailed building specifications, appropriately scaled architectural relief drawings (or equivalent) would be provided following approval at the detailed design phase prior to construction. The existing Landscape Management Plan would be updated upon approval to incorporate the onsite vegetation planting committed to in Section 14.1.3 of the EA.
General Requirements 4: "The environmental Assessment of the project must include a description of the existing environment, using sufficient base line data."	• *Does not provide a topographical map of the site or surrounding areas, including the FIA.* • *Does not provide Air Quality contour maps for Scenario 1.*	The existing environment is addressed as a defined section in each of the impact assessment sections of the EA (Section 8 to 14). It was not considered necessary to provide a topographical map of the site or surrounding areas. Scenario 1 was provided for baseline analysis purposes only. Scenario 2 isopleths were plotted as they are the primary subject of the assessment.
Key Issues: Noise "Noise & Vibration – including construction, operational and traffic noise and particularly the impact of the proposed development to sensitive receptors (both current and proposed)."	• *Does not include a detailed assessment of the FIA.* • *Additional details provided in Section 3.1 Noise Issues.*	Noise impacts at HG and FIA are further assessed in **Section 4.7** of this Submissions Report.
Key Issues: Air Quality & Odour "Air Quality & Odour – air quality impacts for construction and operation of the proposed development, particularly in relation to particulates and impacts to sensitive receptors (both current and proposed). Details of proposed mitigation measures."	• *Does not include a detailed assessment of the FIA.* • *Additional details provided in Section 3.2 Air Quality and Odour Issues.*	A detailed assessment focusing of the FIA was not included because the air quality impact assessment shows the predicted air quality impacts on the FIA are not predicted to be significant.

DG Requirement	FIALG Comment	Response
Key Issues: Visual "Visual – asses the visual impact of design and siting of the facilities & buildings, lighting and any signage. Proposed landscaping including details of indigenous vegetation planting to offset clearing."	• *Does not include a detailed assessment of the FIA.* • *Additional details provided in Section 3.2 Visual Amenity Issues.*	The visual impact assessment (see Appendix H of the EA) included three viewpoint analysis locations along Wollombi Road, which bisects the FIA through the centre east to west. These were identification points 8, 9 and 10. The visual impact assessment also included a photomontage from view point 10. It is considered that the visual assessment provides sufficient information to enable an adequate assessment of potential visual impacts of the Project on the FIA. The visual impact on FIA is considered acceptable based on: • Context of the FIA site in proximity the industrial estate; • The new building would largely screen the existing building; and • The existing earth bund with existing bamboo screen planting.
Consultation "During the preparation of the Environmental Assessment, you should consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups or affected landowners."	• *Questionable engagement with Farley residents.* • *EA Section 6.3 does not identify Wollombi Rd residents as being recipients of any NCIA notification yet Figure 9 indicates they were included. Interviewed residents could not recall receiving a letter from NCIA.* • *To date the FIALG has not been contacted by NCIA.*	NCIA has consulted with residents along Wollombi Road as part of the community consultation process (hand delivered invitation to participate), as identified in Figure 9 of the EA and described in Section 6.3 of the EA. As identified by the FIALG submission, an omission was made in the text of Section 6.3 the EA not identifying residents of Wollombi Road as being recipients of the invitation to participate in the community consultation process, even though they were identified in Figure 9 of the EA. It is considered that the residents of Wollombi Road (and as such the FIALG) have been consulted and been provided adequate opportunity to participate in the EA process through the submission made.

The EA has been deemed adequate by DOP, DECCW and the other regulatory authorities mentioned earlier (see **Section 2**). This means that the EA has been considered to adequately address the Director-General environmental assessment requirements. However the detailed review of the key issues by the FIALG has been responded to below.

FIALG Comment:

2.3 Insufficient Opportunity Cost Analysis.

When considering the social and economic benefit of the project, the Department of Planning should place due weight on NCIA's consumption of environmental margins and the effect of that on future industrial and residential development in the surrounding precincts.

Response:

As discussed in Section 17.3 of the EA, the consequences of not proceeding with the Project gravitate around an increasing demand for ceramic tiles locally and globally. If Australian demand for ceramic tiles is not met with local product then the potential for price rises and reductions to the Nation's current account (due to increasing imports) are probable. In 2008 ceramic tile imports to Australia were valued at approximately $280 million.

The economic consequences of the Project not proceeding include the loss of investment capital (approximately $65 million), the ongoing loss of increased employment during operation and construction and reduced economic flow on effects associated with this significant industrial development. Additionally, not proceeding with the Project would result in an underutilisation of well located suitably zoned and well serviced industrial land and the loss of potential environmental and economic synergies with the existing NCIA business.

In relation to potential impacts on the proposed residential land at HG and the FIA we note the following:

- The noise assessment has shown that the predicted impacts at HG are generally consistent with that already approved and additional mitigation measures have been proposed (see **Section4.7**) so that the potential noise impacts would be mitigated as much as reasonably and feasibly possible;
- The additional noise mitigation measures proposed in this Submissions Report (see **Section 4.7**) will help ensure the predicted noise impacts at the FIA would be acceptable;
- The air quality assessment in the EA and the additional contemporaneous assessment presented in this Submissions Report (see **Section 2.3.2** and) predicted no exceedances of the DECCW fluoride criteria. While some exceedances of the DECCW criteria for PM_{10} may occur, due to the elevated background in the Region, the number of additional exceedances would be limited to between zero and one per annum;
- The air quality assessment in the EA predicts that based on the results of the impact assessment and the existing and proposed air quality mitigation measures significant adverse impacts are not expected at existing sensitive receptors as a result of the Project;
- No impact on surrounding industrial development; and
- The onus should also be on the proposed residential development to be planned in such a way that it adequately acknowledges the industrial interface.

Noting these points, it is considered that the Project would not result in sterilising potential residential land or limiting opportunities for future development in the Rutherford industrial estate.

In relation to employment generation, the benefits to the community would include the direct employment of an additional 70 staff for the Project and the generation of follow on jobs such as raw material suppliers, transporters, product distributors and ancillary service providers. These additional 70 employees, along with the 70 existing staff, would result in a total future workforce of approximately 140 employees. In addition to operating staff, a workforce of up to 50 staff would be required to complete the construction of Project. It is considered that this would place NCIA as a significant employer in the Region resulting in positive economic outcomes.

FIALG Comment:

2.4 Insufficient Acceptance of Responsibility for Environmental Impacts

A fundamental tenant of sound planning is that all reasonable measures should be required to contain the impacts of a development within the confines of the development site. Not only is it the most effective method of reducing the scale of any impact but it also ensures that the development potential of other sites in close proximity are not unduly inhibited by the impacts.

Response:

Noted.

The fundamentals of sound planning practice also include not making planning decisions which create potential land use conflicts. The onus should also be on the proposed residential development to be planned in such a way that it adequately acknowledges the industrial interface.

FIALG Comment:

2.4 Insufficient Acceptance of Responsibility for Environmental Impacts

This notion is enshrined in the Maitland LEP 1993 Clause 23(2) where in respect to land zoned 4(a) General Industrial (the zoning that applies to the NCIA site), "Industrial development is allowed only if it does not adversely affect adjacent residential areas." Similarly in SEPP 33, developments of 'potentially hazardous and offensive industries' are required to contain their impacts so that they do not adversely affect existing and future land development in the locality.

Response:

Noted. Clause 23(2) and the applicability of SEPP 33 is addressed in **Section 4.6** of this Submissions Report.

FIALG Comment:

2.4 Insufficient Acceptance of Responsibility for Environmental Impacts

In its current form, the proposed expansion does adversely affect existing and planned residential areas with respect to noise, air quality and visual amenity. While some cursory attempts at mitigations have been made the proponent has also sought to reduce their liability by imposing these affects on 3rd parties by:

- *seeking increases in permissible pollution limits, effectively reducing the existing and future residential amenity; and*
- *requiring other developments to provide the mitigation measures to attenuate impacts largely produced by NCIA e.g. NCIA insistence that HG attenuates noise by constructing barriers and land buffers*.

Response:

NCIA is seeking to have equivalent emission limits and pollutant loads applied to the Project that are applied to the approved development. NCIA are not seeking to increase allowable emission limits and pollutant loads more than proportionately beyond that already approved by NCIA's existing development consent and Environment Protection Licence.

The requirements of Clause 52 of Maitland Local Environmental Plan (1993) (see Section 14.4.2 of the EA) place an onus on the developer of the HG site to carry out an assessment of the potential amenity impacts associated with the adjoining industrial activities and to address potential impacts in a satisfactory manner by adopting appropriate mitigation through layout and design. This is a statutory and logically sound planning requirement imposed by the LEP, and not something imposed by NCIA as a result of this project. This, in combination with the mitigation measures detailed in the EA and this Submissions Report, should provide adequate mitigation of adverse potential impacts of the Project on any potential future residents of the HG site.

A basic premise of good environmental planning is to ensure appropriate separation between industrial development and proposed residential development on adjoining or nearby land. All reasonable mitigation measures have been proposed as part of this EA and this submission report. Appropriate design and planning of the proposed HG development is also required to manage the potential impacts (see Section 14.4.2 of the EA).

FIALG Comment:

2.4 Insufficient Acceptance of Responsibility for Environmental Impacts

The proponent has a history of abrogating its environmental obligations, for example:

- *Air quality standards and monitoring procedures have been regularly breached, as evidenced in environmental reports for the existing NCIA development.*
- *Visual amenity considerations were disregarded when the existing facility was constructed. In the EIS for the existing facility, NCIA had indicated they would utilize external building construction materials that were coloured dull greys and grey-greens to reduce the visual dominance of the building but failed to implement this, adopting a light cream colour instead.*

Response:

The stack emissions testing undertaken in July and August 2009 was used in the modelling that formed part of the EA. However, since then mitigation measures have been undertaken which demonstrate compliance with the licence conditions with concentrations of flouride measured on 1 June 2010 of 2.2mg/m^3 (Kiln stack 1) and 1.4 mg/m^3 (Kiln stack 2) measured on 27 November 2009 (compared to a limit of 5 mg/m^3). NCIA is committed to meeting its stringent emission limits for flouride and particulates. The recently submitted 2009-10 Annual Return demonstrates NCIA's compliance in meeting the flouride and particulate licence limits.

Best practice mitigation measures have been proposed as part of the EA (i.e. hydrated lime scrubber integrated into the fabric filter baghouses) and these have proven to be effective at neutralising flouride and particulate from the kiln and spray dryer exhaust gasses. The recent AQMS (2010) demonstrates NCIA commitment to resolving the efficiency issues that have led to past non-compliances with regards to meeting its emissions limits.

The FIALG comments regarding the visual appearance of the existing factory are noted. NCIA commit to limiting the visual impact of the Project by implementing the mitigation measures as stated in the Statement of Commitments in the EA (see Section 15 of the EA) and revised in **Section 6** of this Submissions Report. These include:

- Planting of native vegetation around the perimeter of the site would be undertaken in locations unaffected by buildings, internal road ways or infrastructure easements to assist in screening outside views;
- The use of appropriate building materials and colours to blend with the surrounding environment and reduce the visual dominance of the building;
- Lights would be placed and designed to avoid causing glare or excessive light spillage on neighbouring sites;
- Lighting near adjoining properties where appropriate would be shielded with cut off luminaries;
- Building illumination would be discrete; and
- Lighting to car park areas and for security purposes would be low intensity.

FIALG Comment:

2.4 Insufficient Acceptance of Responsibility for Environmental Impacts

Response:

Table 5: Insufficient Acceptance of Responsibility for Environmental Impacts, Recommendations

FIALG Recommendation	Response
The Department of Planning should reaffirm the existing development consent emission limits for noise and air quality.	DECCW has recommended emission limits equivalent to the approved development as part of their submission to the EA. NCIA is willing to commit to these limits.
The Department of Planning should require NCIA to undertake additional strategies for reducing and containing the impacts of their proposal thereby upholding their development obligations under the Maitland LEP 1993 to obviate adverse offsite environmental impacts.	The EA and this Submissions Report commit to all reasonable and feasible impact mitigation measures with regards to air quality, noise and visual impacts on the FIA. It is considered that the predicted impacts on the FIA would not be significant and as a result NCIA's obligations under the Maitland LEP 1993 are met.
Should the proposal be approved, it is imperative that the development consent is appropriately conditioned and that a strict regime of compliance is enforced.	Noted.
The Department of Planning should evaluate this proposal in the light of SEPP 33 provisions as the industry has the potential qualify as a 'potentially offensive industry'.	The applicability of SEPP 33 is addressed in Section 14.2 of the EA and **Section 4.6** of this Submissions Report.
NCIA should consult with the FIALG to explore opportunities for co-operation to resolve the land use conflicts.	Responded to in **Table 4**.

FIALG Comment:

As the FIA was not recognised as an urban release area in the EA, the majority of the FIA land was regarded as rural land and as a consequence the FIA has not been comprehensively assessed for acoustic impacts.

Response:

The INP states, for developing areas, that future development should be considered:

> *when future developments have advanced to the point of a development application being known to the regulatory/consent authority or where details of the proposal have been published.*

No DA has not been lodged, or granted at the Farley Investigation Area (FIA).

Notwithstanding this, comprehensive and detailed noise modelling has been undertaken for the project and the resulting noise contours show the predicted noise levels at all locations in the FIA land.

The project has minimal impact of the FIA land as the 35 dBA contour (the minimum criteria that DECCW will set for a development) extends only onto a small portion of the FIA under worst case meteorological conditions. Under calm conditions the noise impact on the FIA land is below 35 dBA.

FIALG Comment:

The development consent for the existing NCIA plant identified acoustic impacts that were deemed appropriate for the surrounding residential environment. Further explanation is required as to why higher noise limits are now appropriate and acceptable for the same sensitive receivers.

Response:

In the NIA project specific noise limits were determined in accordance with the INP for residential receivers surrounding the NCIA site. Higher noise limits were established as measured background noise levels have increased in the general area since the Bridges 2002 assessment was undertaken. In relation to the noise impacts of the project the predicted noise impacts have actually reduced in comparison with those predicted by Bridges 2002. **Figure 4** and **Figure 5** and **Appendix C** demonstrate that the noise levels of the Project are predicted to be consistent with the actual noise levels form the existing development (i.e. Stages 1 and 2).

FIALG Comment:

The request for a manifest reduction in the current acoustic amenity of the environment does not appear to be warranted as there are numerous design and construction attenuation methods that can better contain the noise on-site, which have not been included in the NCIA noise attenuation strategy, for example:

- *Construction of the building using concrete slabs.*
- *Use of thicker roof metal sheeting.*
- *Greater application of industrial silencing techniques, for example in the dust extraction facility*.

Response:

A manifest reduction in the current acoustic amenity is not proposed. A comparison of the noise impact from the 2002 EIS with those for the proposed facility shows that the noise contribution from the Project (stages 1 to 8) is approximately equivalent to that approved for the existing facility (Stages 1 to 4). This essentially means that the noise contribution of the Project would not change significantly from that already approved. This outcome was achieved due to the fact that:

- The Heggies noise model was developed post construction of the existing NCIA facility and therefore used actual measured noise sources and allowed the model to be calibrated to the actual noise output of the existing facility. This option was not available to Bridges Acoustics (2002) and therefore the assessment relied on predictions only; and
- The proposed new building forms a barrier that shields existing sources on site particularly from receivers located to the east of the site in Rutherford and to a lesser extent those in Farley. This reduces the noise impact from the existing facility. Notwithstanding this, additional mitigation has been considered and is detailed in the response to the DOP in **Section 4.7**. This additional mitigation is likely to result in a further 2-3 dBA reduction across the HG and FIA sites.

FIALG Comment:

There was only one noise logger south of the railway line at 256 Wollombi Road and it was NOT at the location identified as the nearest potentially affected noise-sensitive receiver along Wollombi Rd (EA Appendix E, Figure 4, p7).

Response:

The noise logger was placed at 256 Wollombi Road approximately 1250 m south of the NCIA site. The closest existing residential receiver at Farley is approximately 450 m west of the logger location (1170 m south of the NCIA site). Heggies considers that the location of the noise logger will give a representative background noise level of residences in the general Farley area.

FIALG Comment:

There is no breakdown of the production process that analyses and characterises each acoustic noise event. This data would allow for a greater understanding of the impact of the noise beyond its volume and inform more targeted attenuation strategies.

Response:

The Heggies noise model considered 75 noise sources for the existing and proposed facility. Each noise source has a detailed 1/3 octave band sound power level associated with it. As the majority of the processes are enclosed within buildings the majority of the output from the noise model is associated with building facades as noise travels through the building facades making distinguishing noise sources difficult. . The major sources of noise from the site are associated with emissions from the Mill and Spray Dryer section of the building. The output of the noise model is contained within **Appendix C**.

FIALG Comment:

The noise goals for the existing Rutherford residential area and the HG residential area are different (EA, Table 25, p65), even though equivalent residential densities are envisaged. Clarity is required as to why these should be different and how any such rationale might be applied to the determination of the FIA noise goals.

Response:

Project specific noise limits were determined in accordance with the INP for residential receivers surrounding the NCIA site. These noise goals are determined having regard to the existing background noise, the existing acoustic environment, land use classifications, and the contribution of existing industrial sources. These factors result in different noise goals for HG as it is closer to the existing industrial area, which results in higher ambient noise level and hence higher noise goals.

FIALG Comment:

Then in the following table (Table 26, EA. p65) details night time sleep disturbance noise goals for Farley which are in defiance of the ENCM recommendation by up to 7 dB.

Response:

Sleep disturbance goals used in the NIA were established in accordance with the ENCM. The relevant sleep disturbance noise goals for each residential area are provided in Table 12 of the NIA (reproduced as **Table 6** below). An extract from the NIA (Table 12) is as follows:

Table 6: Sleep Disturbance Noise Goals

Location	Period	Measured Background Noise Level (L_{A90})	Sleep Disturbance Noise Goal $L_{A1(1minute)}$
Heritage Green	Night	38 dBA	53 dBA
Existing Rutherford residences (west of NCIA)		36 dBA	51 dBA
Farley residences (south of NCIA)		37 dBA	52 dBA

It is noted that Table 26 of the EA contained two typographical errors in transcribing the sleep disturbance criteria from the above table into the EA. The information in **Table 6** above contains the correct Sleep Disturbance Noise Goals which are compliant with the ENCM recommendations. It can be seen in **Figure 4** and **Figure 5** that the sleep disturbance noise goals are largely contained with the NCIA site boundary.

FIALG Comment:

There is a marked difference in the level of incursion into the FIA of the 35dA contour between the Heggies (2009) study and the Bridges Acoustic (2002) study (EA, Figure 10). Additional detail is required to account for the difference and substantiate the Heggies study as the more reliable estimate.

Response:

The difference in the noise modelling outputs between Bridges Acoustics (2002) and Heggies (2010) can be accounted for in three ways:

a) The Heggies noise model was developed post construction of the existing NCIA facility and therefore used actual measured noise sources and allowed the model to be calibrated to the actual noise output of the existing facility. This option was not available to Bridges Acoustics (2002) and the assessment relied on predictions only;

b) The proposed new building forms a barrier that shields existing sources on site particularly from receivers located to the east of the site in Rutherford and to a lesser extent those in Farley. This reduces the noise impact from the existing facility; and

c) Changes in the surrounding developments and growth in the Rutherford Industrial Estate of the last eight years have resulted in a changed acoustic environment.

FIALG Comment:

NCIA contend they cannot fully account for the acoustic impacts to the HG site as:

> *"The degree of affectation would depend on the type of development proposed for different areas of the proposed Heritage Green (i.e. site layout and orientation)" (EA, Appendix E, p22).*

NCIA can still model the acoustic impacts under a variety of scenarios that take into account distances from the noise source and dwelling density/height to provide acoustic measurement estimates and expected exceedances of target noise goals. The EA needs to perform more comprehensive acoustic modelling to quantify the extent of impacts on both urban releases areas (FIA and HG) with and without mitigation measures so that adequate consideration can be given to the acceptability of the residual environmental impacts.

Response:

The noise criteria set out in the INP apply at the nearest affected residential receivers. Until a DA has been approved for the HG or FIA sites that details the location of the nearest affected residential premises the noise impact cannot be fully defined. Notwithstanding this fact, comprehensive detailed noise modelling has been undertaken for the proposed NCIA facility and the resulting noise contours show the predicted noise levels at all locations both within the HG and FIA land.

In addition, as there is an existing industrial area adjacent to the proposed HG site, HG is required by the LEP 1993 to consider the noise from these existing industrial noise sources in the planning phase of the development of the site (refer Clause 52 Maitland LEP 1993).

FIALG Comment:

The EA indicates that operational noise modelling has assumed that the noise mitigation and management measures have been implemented. Yet there is no clarity as to the attenuation value of the assumed mitigations.

Response:

Noise mitigation and management procedures contained in the NIA Section 7.1.2 that were incorporated into the noise model with the aim of reducing operational noise emissions are as follows:

- No truck deliveries of raw products or final product despatch will occur during the night-time period;
- Electric, laser guided forklifts are utilised to transport final product from the proposed factory building to the product despatch area of the existing building;

- The transport route for both forklifts and delivery/product despatch truck has been designed to minimise the need for reversing and, as such, the use of reversing alarms;
- The bag-houses of the proposed kiln stacks will be located inside the proposed factory building; and
- The proposed dust extraction unit, located on the southern end of the eastern wall of the proposed factory building, will be enclosed to reduce noise emission to the east and south.

The effectiveness of the mitigation measures vary in relation to the location of the receivers.

The approximate reduction in noise levels generated by the proposed facility in relation to the mitigation measures for receivers east of the site (at HG east see **Figure 3**) are as follows:

- No truck deliveries at night - 16 dBA;
- Electric forklift usage - 4 dBA;
- Baghouse enclosed - 10 dBA; and
- Dust extraction unit enclosed - 9 dBA.

FIALG Comment:

The EA utilises the Industrial Noise Policy definition of 'urban' when accessing amenity for residential receiver types. With respect to the FIA the 'suburban' definition would more accurately characterise the future environment and adoption of this definition would have required the EA to address more stringent noise emission standards.

Response:

Heggies maintains its position that the acoustic environment of the general area is best described as "Urban" as the location is adjacent to an industrial area. Industrial noise contribution is evident during the day, evening and night-time period. The acoustic environment of the area would definitely "not" be described as "defined by the natural environment".

This is supported by a report commissioned by HG and produced by ERM Proposed Subdivison – Heritage Green, Rutherford, NSW Industrial Noise Impact Assessment dated November 2008. This report states in Section 2.2:

> *"the applicable amenity area for the proposed Heritage Green subdivision is an Urban amenity criteria."*

FIALG Comment:

The ARTC Maitland to Minimbah Third Rail proposal is a Part 3a project currently being deliberated on by the Department of Planning and given that it is the link between the completed first phase and the Newcastle port it is highly likely to be approved. The ARTC project will significantly add to the background acoustic environment, during the construction and operational phases. Based on the proposed construction schedules of both projects the construction phases may well run concurrently. The EA does not acknowledge the Third Rail Project or take into account the cumulative effect of the acoustic impacts of both projects during the construction or operational phases.

Response:

The cumulative impact of industrial noise in the vicinity of the project has been addressed within the NIA. Potential cumulative noise impacts from existing and successive developments are embraced by the INP procedures by ensuring that the appropriate noise emission criteria (and consent limits) are established with a view to maintaining acceptable noise amenity levels for residences.

Therefore, the cumulative impact of the proposed NCIA development with existing industrial noise sources has been assessed in the determination of the amenity levels at surrounding potentially noise sensitive areas.

With regard to the Third Rail Project, the INP provides no requirement to assess the cumulative impact of these sources with industrial-type sources. Road and rail sources are assessed under separate noise policy and guidelines and hence to consider them cumulatively as part of the NIA would be in contravention of the INP.

The Third Rail Project may have an impact on the acoustic amenity of the FIA and HG land depending on the mitigation planned by ATRC.

FIALG Comment:

While the expanded rail operations will have a significant impact to the acoustic amenity of the area and ARTC has a responsibility to ameliorate the impacts, this in no way diminishes NCIA's responsibility to contain and/or mitigate acoustic impacts to the FIA site. Rail passbys are not continuous and adequate attenuation measures need to be in place to mitigate the acoustic impacts of the NCIA plant, inclusive or exclusive of ARTC generated acoustic impacts. Similarly NCIA cannot rely on the development of HG to provide acoustic barriers that will attenuate noise emanating from the NCIA site as ultimately there is no guarantee for the FIA that the HG site will be developed.

Response:

Noted. The noise model for NCIA has not relied on noise from rail operations or additional noise barriers being constructed on the HG site in calculating acoustic impacts. Additional mitigation measured from the NCIA site have been proposed in **Section 4.7**.

FIALG Comment:

3.2 Air Quality and Odour Issues

Response:

PM_{10} is addressed in response to MCC in **Section 2.3.2** of this Submission Report.

Fluoride is addressed in response to HG in of the Submissions Report.

Fugitive odour and odour emissions were not considered extensively by the EA, as under normal operation of the existing facility and that of the proposed expansion these types of emissions have not occurred to date and are not expected to occur.

FIALG Comment:

3.2 Air Quality and Odour Issues

NCIA need to provide additional explanation to account for the significant differences in the number and location of residential receptors impacted by air quality exceedance between S1 and S2.

Response:

Scenario 1 is provided for baseline analysis purposes only. Scenario 2 isopleths were plotted as they are the primary subject of the assessment.

FIALG Comment:

3.2 Air Quality and Odour Issues

NCIA need to clearly identify mitigation strategies that have already been factored into the modelling and then quantify the level of attenuation afforded from any other proposed works so that likely residual air quality impacts for the FIA can be identified and addressed.

Response:

NCIA currently use industry standard baghouses to mitigate particulate and fluoride emission from their operations and these were factored into the modelling. These baghouses are planned to be implemented as an integral part of the Project and were also factored into the modelling. The recently AQMS has shown air quality performance of the NCIA facility is below the prescribed limits. **Section 2.3.2** and **Section 4.8** show that between zero and one additional PM10 exceedances and zero additional fluoride exceedances are expected as a result of the Project.

FIALG Comment:

3.3 Visual Amenity Issues

The NCIA EA has not identified nor reviewed the potential visual impacts on future residential development within the FIA. The visual perspectives incorporated within the EA are not taken from any identified or potential residential receivers along Wollombi Road.

Response:

The visual impact assessment (see Appendix H of the EA) included three viewpoint analysis locations along Wollombi Road, which bisects the FIA through the centre east to west. These were identification points 8, 9 and 10. The visual impact assessment also included a photomontage from view point 10.

As stated in the recommendation to section 2.1 of the FIALG submission "The EA needs to acknowledge that the entire FIA urban release area is a sensitive receptor" and as such the selection of viewpoint 8, 9 and 10 are deemed representative of three separate potential residential receivers.

It is considered that the visual assessment provides sufficient information to enable an adequate assessment of potential visual impacts of the Project on the FIA. The visual impact on FIA is considered acceptable based on:

- Context of the FIA site in proximity to the industrial estate;
- The new building would largely screen the existing building; and
- The existing earth bund with existing bamboo screen planting.

FIALG Comment:

3.3 Visual Amenity Issues

The visual impacts within the FIA are unknown and are likely to be varied due to the topography of the FIA. The FIA land slopes upwards away from the railway line to the ridgeline defined by Wollombi Road. The existing NCIA building, due to its size and colour, is already prominent in the industrial landscape when viewed from Farley. The proposed new building due to its height, bulk and scale will exponentially exacerbate the already significant visual impact.

Response:

Noted.

The claims that the height, bulk and scale will exponentially exacerbate the already significant visual impact are inconsistent with the findings of the EA visual impact assessment (VIA) and cannot be supported on the basis of sound analysis. Visual impact is limited due to the NCIA site is zoned for industrial development, the FIA is a significant distance from the NCIA site, the context for the wider visual catchment is industrial, it is likely some form of intervening development may occur on the HG site and mitigation measures have been proposed (see **Section 6** of this Submission Report) The VIA findings for these locations are presented in **Table 7**.

Table 7: Visual Impact Assessment findings for Wollombi Road Viewpoints

Viewpoint	VIA Comments
8 (south west of NCIA)	From this viewpoint future expansion of the facility would be visible however largely screened by the existing tile factory.
9 (south of NCIA)	From this viewpoint the higher sections of the existing tile factory are visible. A clearing in the vegetation associated with a power line easement has created a view corridor in line with the sites western boundary. From this viewpoint future expansion of the facility would be visible however partially screened by existing trees in the foreground and middle ground.
10 (south east of NCIA)	From this viewpoint the bulk and length of the existing tile factory is clearly evident. Future expansion of the facility would be visible from the location and would provide considerable screening of the existing building. Vegetation on adjoining land would provide some softening of the built form and assist in reducing the apparent height and scale of the building.

FIALG Comment:

3.3 Visual Amenity Issues

The EA proposes that the visual impact will be mitigated by the choice of building colours and material selection, appropriate landscaping and the installation of lighting which avoids lighting spillage. It is difficult to determine the residual visual impact as the EA does not provide details on how the bulk and scale of the building will be reduced

through selection of building materials and colours. Given that a large number of future residences (HG and FIA) are likely to be viewing the development, many from elevated locations, it is incumbent on the proponent to identify specifically any architectural and aesthetic treatments that are proposed, so that an informed assessment can be undertaken. In this regard it would be appropriate for a series of photomontages to be prepared showing the likely impact from sensitive locations within HG and the FIA. Consideration should be given to the greater use of articulation in both the roof and walls to assist in reducing the bulk and scale, and to the use of alternate wall materials such as Hebel block or pre-fabricated concrete panels with recessed sections to provide visual relief, these options would have the added benefit of having increased acoustic attenuation properties.

Response:

The EA commits to the following mitigation measures as they relate to the potential visual impacts:

- Planting of native vegetation around the perimeter of the site would be undertaken in locations unaffected by buildings, internal road ways or infrastructure easements to assist in screening outside views;
- The use of appropriate building materials and colours to blend with the surrounding environment and reduce the visual dominance of the building;
- Lights would be placed and designed to avoid causing glare or excessive light spillage on neighbouring sites;
- Lighting near adjoining properties where appropriate would be shielded with cut off luminaries;
- Building illumination would be discrete; and
- Lighting to car park areas and for security purposes would be low intensity.

As the new factory building would be screened by the existing factory building (at the west of the FIA) and would screen the existing factory building (east of the FIA) and the distance that separates NCIA from the FIA it is considered that the potential visual impact of the Project has been overstated by the FIALG submission. The viewpoint analysis in the VIA ,the photomontage for viewpoint 10 and the mitigation measures committed to are deemed to provide sufficient information to assess the potential visual impacts of the Project.

FIALG Comment:

3.3 Visual Amenity Issues

A significant proportion of the site is proposed to be developed (building and hard stand) leaving limited opportunity for landscaping. Given that landscaping is intended to mitigate the development's overall visual impact it is imperative that a detailed landscaping plan be prepared showing vegetation types, location, numbers and mature heights. The landscaping plan should take into account views from the various locations within the FIA. The landscaping strategy/plan should also canvass offsite landscaping opportunities and to this end the Farley Landowners Group are keen to engage with NCIA to discuss the proposal and the best way to mitigate its visual, acoustic and air quality impacts on future residences within the identified Farley urban release area.

Response:

Upon approval NCIA would finalise their onsite revegetation generally in accordance with Figure 4 of the EA and as described in Section 14.1.3 of the EA. This native vegetation planting strategy would maximise the available opportunities for vegetation planting without compromising the safe operation of the factory or expansion of the tile manufacturing facility. In total an estimated 1.34 hectares of onsite revegetation planting would be achieved following this approach. This includes the eastern and western site boundaries.

We also note the existence of the three to four metre high earth bund with eight to ten metre high mature bamboo plantings surrounding the southern and eastern boundaries of the NCIA site, which provides some screening of the NCIA site from these directions.

FIALG Comment:

3.3 Visual Amenity Issues

Specific details regarding building treatments/materials, landscaping and lighting are integral to understanding the impact of the proposal and should be provided and assessed prior to any determination. Should consent be granted to the proposal relevant conditions should be imposed to ensure compliance with these aspects of the development. History on this site has proven that reliance on general commitments within the EIS does not translate to enforceable development outcomes as is evidenced by the existing colour of the building being light

cream as opposed to the grey-green that was muted, likewise the promise to use materials to provide visual relief has not eventuated.

Response:

As stated earlier, upon approval the existing Landscape Management Plan would be updated to incorporate the native vegetation planning plan committed to in Section 14.1.3 of the EA. This would be submitted to DOP for approval. The existing Landscape Management Plan would be revised to include external lighting design requirements and adverse lighting impact mitigation.

Specific details regarding building colours and materials would be determined in consultation with DOP as part of the process finalising of the approval. NCIA commit to minimising the visual impact of the Project as much as reasonably possible via implementation of the mitigation measures committed to in the EA and **Section 6** of this Submission Report.

FIALG Comment:

3.3 Visual Amenity Issues

*Recommendations made by the FIALG are presented in **Table 8**.*

Response:

Table 8: FIALG Visual Amenity Issues Recommendations

FIALG Recommendation	Comment / Response
NCIA need to provide specific details of all external finishes and building materials to be used and how they will mitigate the visual impact of the building from the FIA. NCIA need to give greater consideration to building design solutions to mitigate visual, noise and air quality impacts.	Specific details regarding building colours and materials would be determined in consultation with DOP as part of the process finalising the conditions of Approval once approval has been granted. NCIA commit to minimising the visual impact of the Project as much as reasonably possible via implementation of the mitigation measures committed to in the EA.
NCIA need to prepare photomontages that view the development from a variety of sensitive receptor locations within the FIA.	The viewpoint analysis in the VIA ,the photomontage for viewpoint 10 and the mitigation measures committed to are deemed to provide sufficient information to assess the potential visual impacts of the Project. NCIA do not consider that additional photomontages would provide further insight into the potential visual impacts on the FIA.
NCIA need to provide a detailed landscaping plan, showing location, type, number and mature heights of trees and shrubs.	Upon approval, the existing Landscape Management Plan would be updated to incorporate the native vegetation planting plan committed to in Section 14.1.3 of the EA. This would be submitted to DOP for approval. The updated Landscape Management Plan would be revised to include external lighting design requirements.
NCIA need to provide a detailed lighting plan, showing outdoor installation locations, orientations and lighting types.	
NCIA need to meet immediately with affected urban release landowners to explore opportunities for cooperation to address visual impacts. For example, the utilization of construction fill in the formation of earth bunds and landscaping both on and off-site.	Consultation is responded to in **Table 4**. It should be noted that the existing earth bund surrounding the southern and eastern NCIA site boundary was constructed with soil from the construction of the existing NCIA facility. Landscaping is proposed within the NCIA site, and no further landscaping is considered warranted.

4.0 Interested Stakeholder – Heritage Green (HG)

4.1 General Issues

HG Comment:

2.1.1 Description of the Existing Environment

No topographic detail is provided and proponent did not consult with HG.

Response:

The existing environment is described in detail in each of the impact assessment sections of the EA (Sections 8 to 14). It was considered that a topographical map was not necessary to adequately address the requirements of the Director-General environmental assessment requirements. Stormwater is assessed in Section 12 of the EA and additional assessment is provided in **Section 4.9** of this Submissions Report. Visual impacts are addressed in Section 13 of the EA.

HG were consulted via mail with the stakeholder Project briefing note that explained the Project in detail and an invitation to participate in the EA consultation process, which was the same briefing note sent to the key Government agencies as part of the consultation process. This was sent to Thomas Delgato, Senior Development Manager, McCloys Group on the 20 May 2009.

HG Comment:

2.1.2 Description of the Proposed Development

The application does not provide sufficiently detailed plans of the proposal to enable a competent assessment of the potential impacts of the development. In particular the following is considered necessary prior to enabling the consent authority to undertake a proper assessment and meaningful public consultation to ensue:

- *a detailed site survey, including topographic details;*
- *appropriately scaled architectural drawings;*
- *details of bulk earthworks, erosion and sedimentation controls;*
- *a detailed landscape plan which illustrates proposed treatments at the boundary, particularly at the interface with the adjoining Heritage Green site;*
- *stormwater management details; and*
- *description of staging and how and when this is to be implemented.*

Response:

Table 9: HG Comments Regarding Description of the Proposed Development

HG Comment	Comment / Response
A detailed site survey, including topographic details.	The existing environment is described in detail in each of the impact assessment sections of the EA (Sections 8 to 14). It was considered that a topographical map was not necessary to adequately address the requirements of the Director-General environmental assessment requirements
Appropriately scaled architectural drawings.	The EA provides site layout, east and west elevations (to scale) and internal fit out figures. It is considered this level of detail is adequate for the purposes of an EA. Detailed building specifications, appropriately scaled architectural relief drawings (or equivalent) would be provided following approval at the detailed design phase prior to construction.

HG Comment	Comment / Response
Details of bulk earthworks, erosion and sedimentation control.	Soil and water is considered in Section 12 of the EA. Additional assessment of soil and water is provided in **Section 4.9** of this Submissions Report.
A detailed landscape plan which illustrates proposed treatments at the boundary, particularly at the interface with the adjoining Heritage Green site.	The existing Landscape Management Plan would be updated upon approval to incorporate the onsite vegetation planting committed to in Section 14.1.3 of the EA. It should be noted that NCIA provided the material to the former golf course for the construction of the earth bund surrounding the east and south NCIA boundaries.
Stormwater management details.	Stormwater considered in Section 12 of the EA. Additional assessment of surface water / stormwater is provided in **Section 4.9** of this Submissions Report.
Description of staging and how and when this is to be implemented.	The staging of the Project is detailed in Section 4.2.1 of the EA.

4.2 Director General Requirements

HG Comment:

The Environmental Assessment fails to fully address all the matters specified in the DGR's, as summarised in the following table and discussed further below.

Response:

Table 10: Response to HG Comments Regarding the DGRs

DGR Reference and Requirement	HG Comment	Comment / Response
General Requirements: The EA must include a detailed description of the project, including plans of any proposed building works.	*Detailed plans of the proposed works omitted.*	A detailed description of the Project is provided in Section 4 of the EA. The EA also includes site layout, east and west elevations (to scale) and internal fit out figures. It is considered this level of detail is adequate for the purposes of an EA.
General Requirements: A detailed assessment of the key issues….which includes: a description of the existing environment.	*Detailed description of existing environment omitted.*	The existing environment is described in detail in each of the impact assessment sections of the EA (Sections 8 to 14).
General Requirements: A detailed description of the need for the project, alternatives considered, including justification on economic, social and environmental grounds.	*Justification for the need for the project has not been adequately addressed or demonstrated.* *Existing development has reached only 50% of production capacity (2 of 4 lines).* *The published NCIA Annual Report states production levels which appear to exceed current approved production capacity and meet future production needs submitted within EA.*	The Project is appropriately justified in Section 17 of the EA, which includes justification for the Project based upon the site location and economic, biophysical and social considerations. This section also examines Ecologically Sustainable Development (ESD) as it relates to the Project and also the consequences of not proceeding. The Project intends to implement new technology that will enable

DGR Reference and Requirement	HG Comment	Comment / Response
		NCIA to produce innovative products that will enable it to remain completive and differentiated from the imported tiles from China.
General Requirements: A description of the measures that would be implemented to avoid, minimise, mitigate, rehabilitate/remediate, monitor and/or offset the potential impacts of the project, including detailed contingency plans for managing any potential significant risks to the environment.	*The EA fails to adequately address the means of mitigating the environmental impacts (noise, emissions and visual).* *If unable to ensure no adverse impact in adjoining residential areas, the project application is prohibited development pursuant to Maitland LEP 1993, and cannot be approved.*	The EA details mitigation measures committed to in Section 15 of the EA. Additional noise mitigation measures are proposed in this Submissions Report (see **Section 4.7**). A revised Statement of Commitments is provided in **Section 6** of this Submissions Report.
Key Issue: Noise & Vibration: Impact of the proposed development to sensitive receptors (both current and proposed).	*Assessment inadequate particularly in regard to proposed receptors (future residential development within Heritage Green).*	The EA adequately addresses the potential noise impacts across the proposed HG development. Additional noise mitigation measures are proposed in this Submissions Report (see **Section 4.7**). Some responsibility also sits with HG under the requirements of Clause 52 of LEP 1993 to mitigate against actual and potential industrial noise.
Key Issue: Air Quality and Odour: Impact of the proposed development to sensitive receptors (both current and proposed).	*Assessment inadequate particularly in regard to proposed receptors (future residential within Heritage Green).*	Section 8 of the EA adequately addresses the potential air quality impacts across the proposed HG. Additional air quality assessments are presented in this Submissions Report (see **Section 2.3.2** and **Section 4.8**). Some responsibility also sits with HG under the requirements of Clause 52 of LEP 1993 to mitigate against actual and potential industrial air quality impacts.
Key Issue: Traffic & Parking.	*No justification provided in relation to Employee density, including details of shift overlap periods when the demand for on-site parking is higher. Or the possible need for (and the space requirements associated with) the provision of additional on-site parking as the result of incremental intensification by changes in future operations (or use) of the facility.*	Traffic and parking is adequately addressed in Section 11 of the EA. Maitland Council and the RTA have no concerns in relation to traffic or parking with regards to the Project. Onsite parking and shift change over time is addressed in Section 11.3.8 of the EA. The required additional car parking would be accommodated onsite as per Figure 4 of the EA.
Key Issue: Assess the visual impact.	*Inadequate visual assessment particularly with regard to the future*	Visual Impacts of the Project is addressed in Section 13 of the EA.

DGR Reference and Requirement	HG Comment	Comment / Response
	residential areas within the Heritage Green site. *No landscape plan.*	The visual impacts on HG are discussed in Section 13.3.2 of the EA and throughout this Submissions Report. NCIA has an existing Landscape Management Plan. Upon approval, the existing Landscape Management Plan would be updated to incorporate the native vegetation planting plan committed to in Section 14.1.3 of the EA. This would be submitted to DOP for approval.
Key Issue: Greenhouse Gas and Energy Efficiency: demonstrate the proposal is energy efficient.	*No consequential energy efficiency measures proposed.*	Greenhouse Gas and Energy Efficiency is adequately addressed in Section 9 of the EA, which includes relevant mitigation measures in Section 9.4 of the EA.
Key Issue: Soils and Water	*Insufficient detail provided to demonstrate adequate area available on-site to provide stormwater controls.* *No erosion and sediment controls.* *No evaluation of the potential for rainwater harvesting / recycling.*	Figure 4 of the EA is to scale and clearly shows the size and location of the proposed stormwater management detention ponds. Further assessment of stormwater is provided in this Submissions Report (see **Section 4.9**). Rainwater tanks are addressed in Section 12.4.4 of the EA and further in **Section 4.9** of this report.
Key Issue: Hazards & Risks	*The development is "potentially offensive" and will need to employ mitigation measures in order to reduce or minimise its impact on the adjoining land uses and on the likely future development. This is core to the principle of impact containment which has been implicitly rejected by the proponent. The resultant design of proposal is consequentially approached in contravention to the DGRs.*	Hazard and risk is adequately addressed in Section 14.2 of the EA. A further response to the concerns regarding SEPP 33 is provided in this Submissions Report (see **Section 4.6**).
Consultation: During the preparation of the EA consult with....affected land owners.	*Consultation by applicant not undertaken with Heritage Green land owner.*	Addressed in **Section 4.3** of this Submissions Report.

4.3 Consultation

HG Comment:

The Proponent failed to consult with the McCloy Group.

Response:

HG was consulted via mail with the stakeholder Project briefing note, which included a detailed description of the Project, and an invitation to participate in the EA consultation process, which was the same briefing note sent to

the key Government agencies as part of the consultation process. This was sent to Thomas Delgato, Senior Development Manager, McCloys Group on the 20 May 2009.

The HG consultation is detailed in Section 6.2 of the EA. HG was included in the other relevant authorities and stakeholders category, rather than community category.

4.4 Need for the Project

HG Comment:

Prior to any further consideration of this application the Proponent should be requested to substantiate and fully justify the need for this project. Furthermore, the production figures announced by NCIA within their Annual Report appear to be a clear breach of the development consent, which allows for a maximum production of 3.2 million m^2 per annum per kiln.

Response:

The need for the Project is adequately addressed in Section 3.1 of the EA. In relation to annual production figures, NCIA reports annually to DECCW through the Annual Return for the facility. These Annual Returns are publically available on NCIA's Australian website. The reported annual production figures generally show compliance with their development consent and EPL.

4.5 Potential Land Use Conflicts

HG Comment:

Separation Guidelines

Response:

The separation guidelines discussed in the EA (Section 14.4.2) and previously in submissions made to the MCC with regard to the HG Development Applications are considered to be applicable both to the approved NCIA development as well as the Project. This means that even without the Project, these guidelines which promote adequate separation distances between conflicting land uses to enable well considered planning decisions (i.e. residential and industrial facilities) should be duly considered by the relevant planning authorities when assessing the proposed HG development.

The current design of the HG subdivision, shows many residential lots approximately 50-150 metres from the NCIA south eastern boundary. Based on the existing approved NCIA facility and the proposed Project the location of all these proposed residential lots are in contravention of the separation guidelines identified in the EA.

All reasonable and feasible mitigation measures have been proposed as part of the EA and additional noise measures are included in this Submissions Report. Notwithstanding the predicted impacts across the proposed HG site for the approved NCIA facility (Stages 1-4), these mitigation measures have demonstrated that noise and air quality impacts would be managed adequately and are considered to be generally inconsistent with that already approved.

As such, adequate separation distances should be considered by Council with regard to the approved facility and the Project when considering the HG proposal.

4.6 Statutory Planning Considerations

HG Comment:

2.6.1 Objects of the Act

The application is contrary to and fails to specifically address certain objects of the Environmental Planning and Assessment Act 1979:

(a) to encourage:

> *(ii) the promotion and co-ordination of the orderly and economic use and development of land,*
>
> *(vi) the protection of the environment…*

(c) to provide increased opportunity for public involvement and participation in environmental planning and assessment.

Response:

The Project is considered to meet the Objects of the EP&A Act. The NCIA site is zoned General Industrial (4a) under the Maitland LEP and the Project. Incorporating the environmental mitigation measures proposed the Project considered to be generally consistent with the objectives of the zone and is deemed permissible. The Project would maximise the efficient use of industrially zoned land and would result in increased efficiency in the use of existing services and facilities currently servicing the existing facility. The Project is an expansion of an existing successful business that would result in economies of scale for the delivery of materials, dispatch of product, provision of services and utilities and that would also maximise of the efficient use of the site. In relation to offsite impacts, the EA and this Submissions Report demonstrate that the identified impacts are consistent with that already approved as part of the 2002 EIS for Stages 1-4 of the facility.

NCIA currently operates under a licence from DECCW and development consent from DOP. The various regulatory criteria in these documents provide for the operation of NCIA to occur while balancing the need to protect the environment. NCIA is committed to its obligations regarding minimising its impact on the environment.

As mentioned earlier, NCIA did provide HG an invitation to participate in the EA consultation process. Additionally the exhibition period for the EA has provided HG a second opportunity for involvement in the approvals process.

HG Comment:

2.6.2 Maitland LEP 1993 (LEP 1993)

The NCIA site is zoned General Industrial 4(a) under the provisions of Maitland LEP 1993 which provides for a range of industrial activities. Section 5.1.1 of the EA addresses the provisions of the LEP and the permissibility of the proposed development. However, it fails to address the provisions of Clause 23(2), which provides a description of the zone as follows:

> *The 4(a) General Industrial zone caters for a range of industrial development. Traffic generating development is restricted along main roads. Premises of a commercial and retailing nature are limited in the industrial zone, however bulky goods retailing is allowed. Industrial development is allowed only if it does not adversely affect adjacent residential areas.*

Response:

HG's inference that the HG site must be considered a residential area simply because residential development is allowable (due to Clause 52 of LEP 1993) is flawed. Clause 52 states:

> *2) Despite any other provision of this plan, a person may, with the consent of the consent authority:*
>
> *(a) erect not more than 450 dwellings in a maximum of 6 community parcels, on the land to which this clause applies, and*
>
> *(b) carry out on the land development for commercial purposes or retail purposes, or both.*
>
> *3) The consent authority must not grant consent as referred to in subclause (2) unless the consent authority is satisfied that:*
>
> *(a) the commercial or retail component of the proposed development is required as an integral part of a major tourist recreation facility, being a golf course, and…*

It is clear from the proposed site layout and design of the HG subdivision that there are no commercial or retail components that are an integral part of a golf course. As such it is considered that under Clause 52(3) of LEP 1993 MCC cannot grant consent to the HG application. It is deemed because of this interpretation that the private recreation zoned land at HG (zone 6(b)) cannot be considered a residential area. HG's claims the Minister has no power to approve the Project Application due to 'any adverse impacts' on HG has no credibility because the HG site cannot be considered a 'residential area'.

The EA has addressed the HG site as a residential area due to the requirements in the DGRs and the request from DOP to assess the potential impacts at potential residential locations. However, unapproved developments do not generally need to be assessed in development application of this nature, but in this case have been due to DOP's requirements.

No additional fluoride exceedances and between zero and one additional PM_{10} exccedances per annum of the DECCW criteria have been predicted by the contemporaneous air quality assessments presented in this Submissions Report (see **Section 4.8** and **Section 2.3.2**). This follows the AQMS prepared in 2010 which addressed earlier non-compliances by implementing remedial measures that resulted in compliance with PM_{10} and fluoride EPL criteria.

Noise mitigation measures have been proposed and committed to that demonstrates the noise impacts due to the Project across HG are generally consistent with those already approved for Stages 1-4 of the facility. As such no additional impacts beyond what is already approved are predicted across HG and adverse impacts at existing residential locations are not predicted. Furthermore additional noise mitigation measures are committed to as part of this Submissions Report (see **Section 4.7**) which further reduce the predicted noise levels of the Project to be generally consistent with the existing noise levels from Stages 1-2.

Viewpoint 14 in Appendix H of the EA is the existing entrance to the HG site. The figure shows the view of the existing facility. It can be seen that the majority of the existing factory is shielded by the bamboo screening with only the northern section of the facility visible. The Project would shield some views of the existing facility, as such the sensitivity of the potential change in viewscape is considered to be reduced. As the views towards the Project are considered similar to the existing views the overall visual impact from the proposed HG is seen as similar to the existing situation with only the existing facility. The visual assessment prepared as part of the EA (Appendix H of the EA) made an assessment of the HG site and this is also presented in Section 13 of the EA. The visual impact on HG is considered acceptable based on:

- Context of the HG site immediately adjacent the industrial estate;
- The new building would largely screen the existing building; and
- The existing earth bund with existing bamboo screen planting.

The HG development is sited lower than the Project. This combined with the existing earth bund and substantial vegetation plantings adjacent to the southern and eastern site boundaries would significantly mitigate the visual impact of the Project from the proposed HG.

It is considered that the Project would not adversely affect the HG site beyond what has already been approved or what already occurs due to the existing development (Stages 1-2) and is seen as generally consistent with *Clause 23(2) of the LEP*

HG Comment:

2.6.3 State Environmental Planning Policy No. 33

The statement included in Section 5.3.2 of the EA that the proposal is not considered offensive with respect to SEPP 33 is incorrect. We contend that the NCIA development is "potentially offensive" and will need to employ mitigation measures in order to reduce or minimise its impact on the adjoining land uses and on the likely future development.

Response:

AECOM concurs with the statement made in the HG submission that State Environmental Planning Policy No.33, "Hazardous and Offensive Developments" has been implemented by the DOP to determine whether a development is hazardous and/or offensive and whether it is permitted within a specific land zoning. The method of application of each component of the policy (i.e. hazardous or offensive) is provided in a document published by the DOP, known as "Applying SEPP33 – Hazardous and Offensive Development Guidelines". Explanation of the application of the guidelines is provided below:

Hazardous

Within the scope of SEPP33, the hazardous nature of a site is a function of the quantity of Dangerous Goods[1] stored at the site or the number of transport vehicles delivering or despatching Dangerous Goods to and from the site. Storage of the materials, or the number of Dangerous Goods transport vehicle movements, below threshold levels listed in "Applying SEPP33", means that the site is not potentially hazardous. The "threshold" test is the trigger point for determining whether SEPP33 applies to a development. Statements within the policy, relating to

[1] Dangerous Goods – products listed in the Australian Code for the Transport of Dangerous Goods by Road and Rail (known as the Australian Dangerous Goods Code or ADG).

explanation of what constitutes a hazardous industry are for the purposes of description and understanding the policy. The “threshold” test determines the application.

Notwithstanding any descriptions provided in Applying SEPP33, the threshold levels listed in this policy application document are not exceeded, hence, the potentially hazardous component of SEPP33 does not apply to the Project.

Offensive

AECOM concurs with the statement made in the HG submission, extracted from “Applying SEPP33”:

> *“The Department’s Guidelines indicate that the minimum test to decide whether an industrial activity is “potentially offensive” is:*
>
> - *Does the proposal require a licence under any pollution control legislation administered by the DECCW or other public authority? If so, the proposal should be considered potentially offensive.*
> - *If such a pollution control licence or approval is not required, does the proposal cause offence having regard to the sensitivity of the receiving environment?”*

This will in many cases be a matter for judgement. Consent authorities are advised to consult with the DECCW and take into account their views. It is noted that the facility requires a licence from the Environment Protection Authority (EPA) under section 48 of the *Protection of the Environment Operations Act 1997* (POEO Act) because it is classed as a scheduled activity (Ceramic Works) under Schedule 1 of the POEO Act.

Potential offence occurs when the potential pollutant impacts the environment in excess of the permissible levels granted by the DECCW. As indicated in the extract from “Applying SEPP33” above, where a pollution licence is required, the potential offence should be assessed. However, where the permissible limits of licence conditions from the DECCW are not exceeded, and the DECCW grants a licence, under specific conditions, then where conditions are met no offence occurs. The key point in this “test” is ensuring the conditions stipulated by the DECCW are met.

In some cases, an EA may not be conducted as part of the Development Application. In these cases, potential environmental issues are addressed in a Statement of Environmental Effects (SEE) or a Review of Environmental Factors (REF). SEE and REF assessments may not cover all potential offensive operations and therefore these would be covered in a Preliminary Hazard Analysis (PHA), should a PHA be required. However, where a detailed EA is conducted, the issues associated with the potential offensive nature of the development are assessed within the EA study.

The EA conducted for the Project assessed, in detail, all potential pollution impacts including noise, air quality and waste streams. The EA demonstrated quite clearly that all the potential offensive pollution hazards are effectively managed and meet the licence conditions required by the DECCW. NCIA has addressed previous instances of non-compliances by regular monitoring and upgrading of equipment and practices.

To ensure all required licence conditions are met and environmental impacts are appropriately managed, NCIA commit to those mitigation measures detailed in the Statement of Commitments in **Section 6** of this Submissions report. Hence, the required measures implemented to reduce or minimise impact on the locality will be in place and operational when approval is granted, or progressively implemented as required.

As the Project has been subject to a detailed EA, with extensive assessment of key environmental issues, there would be no further requirement to conduct a PHA for the offensive component, as the PHA would only repeat what was included in the EA. The existing operation complies with regulatory guidelines and consent conditions and the EA has demonstrated that the Project can meet the regulatory requirements relating to air quality and noise in particular.

In both cases, there would be no further requirement for the application of SEPP33 to the project as the hazard component does not apply under the Dangerous Goods storage threshold test and all issues relating to pollution control and the management of potentially offensive impacts are currently being complied with in respect to the existing consent and have been effectively covered in the EA.

4.7 Environmental Impacts: Noise

HG Comment:

Section 2.7.1 - Incorrect measurement of background noise levels. In situations where an existing industry intends to expand its operations, the NSW DECCW Industrial Noise Policy has specific guidelines which require noise from that industry to be excluded from the noise measurement. The purpose of this requirement is to ensure that noise from the industry itself does not artificially raise the background noise levels which are used to derive the noise goals for the expanded development.

Response:

Heggies believes that the background noise levels have been correctly assessed in accordance with the INP Section 2. The difficulty in this situation is trying to minimise noise from the proponent (NCIA) (an existing 24 hour operating facility) while representing the impact of the other noise influences from the existing industrial estate.

To this end Heggies selected a location to represent the Rutherford residential area (Location 2 – 115 Regiment Rd, Rutherford). This location was chosen as it had a negligible influence from NCIA being in excess of 850 meters to the east. Therefore, the criterion set for the existing Rutherford residences is in accordance with the INP.

Location 3 (256 Wollombi Rd, Farley) was chosen to represent Farley residences approximately 1250 m to the south of NCIA. At this location there was minimal influence from industrial sources with such noise being described as just audible. No contribution from NCIA was noted at the time of survey. Measurements of noise contributions from NCIA at Wollombi Road conducted by Spectrum Acoustics (refer Noise Compliance Study Stage 2 Commissioning National Ceramics Industries Australia Rutherford NSW dated October 2009) conclude that estimated LAeq(15minute) were estimated to be below 30 dBA at a similar location. The background RBL noise level at night was consistent with that measured at Location 2 by Heggies.

Therefore, Heggies believes that the criterion set for the existing Farley residences is in accordance with the INP.

Location 1 (3 Mountvale St, Rutherford) was chosen to represent background noise levels on the HG site. The Heritage Green site is bounded to the north and west by an existing industrial estate. The challenges in site selection to accurately reflect the HG site background levels were in relation to minimising the influence of noise from the NCIA site while still representing the impact of noise from the existing industrial area to the north. Ideally a location which is not influenced in any way by the NCIA facility but still adjacent to an existing industrial area would have been preferred. Such a location was not available in this locale.

Location 2 (115 Regiment Rd, Rutherford) was favoured over the Kenvil Close (approximately 800 m to the east) in attempt to minimise the influence of NCIA due to it being more remote from the NCIA facility. Measurements of noise contributions from NCIA at Kenvil Close conducted by Spectrum Acoustics conclude that the LAeq(15minute) levels were estimated to be less than 35 dBA during the night-time period. As Location 2 was more remote from NCIA than Kenvil Close the contribution from NCIA would be less and therefore it would have a minimal influence on the recorded background level in relation to other industrial sources in the area.

HG Comment:

Section 2.7.1 - Inconsistency and unexplained use of different monitoring locations for the nearest sensitive receptor. This makes direct comparisons of current and historical acoustic data difficult to compare and validate.

Response:

As discussed above, the Location 1 was favoured over the Kenvil Close location in an attempt to minimise the influence of NCIA due to it being more remote from the NCIA facility.

HG Comment:

Section 2.7.1 Noise contribution estimates from existing industry in the locality cannot be substantiated for the Evening and Night periods.

Response:

It is correct that operator attended measurements were conducted during the daytime period in order to determine the acoustic character of ambient sources and to determine the existing industrial contribution at the monitoring location so that amenity criteria can be set in accordance with the INP Section 2. As previously stated it is seen as

a conservative approach to adopt the industrial contribution measured during the daytime period for the evening and night as this would result in more stringent amenity noise limits.

HG Comment:

The Heggies report suggests that the acoustical environment in the general area falls in the "urban" category of residential receiver. This is defined as an area with an acoustical environment that:

- *is dominated by 'urban hum' or industrial source noise*
- *has through traffic with characteristically heavy and continuous traffic flows during peak periods*
- *is near commercial districts or industrial districts*
- *has any combination of the above*

where 'urban hum' means the aggregate sound of many unidentifiable, mostly traffic related sound sources.

This is not considered to be characteristic of this area and a more appropriate descriptor would be "suburban" which is defined as an area that has local traffic with characteristically intermittent traffic flows or with some limited commerce or industry. This area often has the following characteristics:

- *decreasing noise levels in the evening period (1800–2200); and/or*
- *evening ambient noise levels defined by the natural environment; and*
- *infrequent human activity.*

The classification is important in establishing the applicable amenity criterion and therefore the extent of noise impact on the adjoining Heritage Green site.

In our opinion the use of the "urban" classification is not appropriate and the "suburban" classification should be adopted which would necessitate the NCIA investigating all possible means of reducing its night time noise levels to 35dB(A).

The cumulative effect of these apparent errors and deficiencies is that the noise criteria are substantially above the noise limits imposed by the current Environment Protection Licence which stipulates the noise restrictions at various times of the day.

Response:

Heggies maintains its position that the acoustic environment of the general area and in particular the HG site is best described as "Urban" as the location is adjacent to an industrial area. Industrial noise contribution is evident during the day, evening and night-time period. The acoustic environment of the area would definitely "not" be described as "suburban" as "defined by the natural environment" as suggested in the Tonin report.

This is supported by a report commissioned by HG and produced by ERM Proposed Subdivision – Heritage Green, Rutherford, NSW Industrial Noise Impact Assessment dated November 2008. This report states in Section 2.2 "The applicable amenity area for the proposed Heritage Green subdivision is an urban amenity criteria."

The existing EPL noise limits were based on the Bridges (2002) assessment which was based on noise predictions rather than operational measurements. Given the growth in the Rutherford Industrial Estate over the last eight years and the resulting change in the acoustic environment (increased background), the existing EPL limits need to be revised.

HG Comment:

Section 2.7.1 - NCIA should be required to adopt all reasonable and feasible means of reducing noise levels within the Heritage Green site. As a minimum, these measures would include:

a) *construction of the proposed new factory building using tilt-up concrete slabs instead of steel sheeting;*
b) *thicker steel for the roof sheeting;*
c) *upgrading of the existing building in a similar manner;*
d) *bag-houses for the kiln stacks located inside the factory building;*
e) *noise reduction for dust extraction unit;*
f) *limitations on the opening of doors in the building, especially at night; and*
g) *application of appropriate industrial silencing techniques.*

Response:

Additional noise mitigation has been considered and is detailed in the response to the DOP in **Section 4.7**.

HG Comment:

Renzo Tonin Report Section 3.3 - Heggies should therefore be requested to give reasons as to why the current Licence conditions should not apply to the expanded development and, in the event that those conditions apply to dwellings constructed in Heritage Green, what reasonable and feasible measures they propose to comply with those conditions.

Response:

The INP section 1.4 states that the assessment procedures (in the INP) can apply to any one of the following three situations:

- new development impact;
- modification of an existing development and its impact – for example, proposed expansion of an existing industrial development; and
- noise associated with existing development.

Given the preceding, NCIA is obligated to apply the INP in the assessment of modification to its existing development. This correctly includes the assessing of current background noise levels and the setting of project specific noise criteria, in particular to a newly proposed development such as HG.

In a developing area, such as that surrounding NCIA, the adoption of the existing noise criteria (which were based on residential receivers in an area more remote from the industrial area and hence in a different acoustic catchment) are considered unreasonable. Additionally, the existing noise limits were based on the 2002 EIS and in the eight years since then the growth of the industrial area has resulted in an elevated background compared to 2002.

In addition, as there is an existing industrial area adjacent to the proposed HG site, HG are required to consider the noise from these existing industrial noise sources in the planning phase of the development of the site (refer Clause 52 Maitland LEP 1993).

4.8 Environmental Impacts: Air Quality

HG Comment:

The EA suggests that the existing monitoring station in the south eastern corner of the site will need to be removed (pg 57) as the footprint of the expanded facility impinges on its current site and "it would no longer be suitable as a location for ambient air and meteorological monitoring". The report indicates that NCIA will discuss with DECCW whether the monitoring station needs to be relocated or even eliminated from the site.

Response:

NCIA currently has two monitoring stations onsite, one at the south east corner and one at the north west corner. These monitoring stations both measure ambient concentration of fluoride and PM_{10}. NCIA is committed to monitoring these pollutants, however with the expansion of the building footprint of the Project it would be necessary to rationalise the monitoring program to one monitoring station. The rationalised program would monitor for the same pollutants as the existing program. Prior to implementation of any changes to the existing monitoring program these will be discussed with and approval sought from DECCW.

HG Comment:

Provide further information and to implement all feasible means of mitigating the impacts associated with particulate matter and HF emissions.

Response:

PM_{10} is addressed in response to MCC in **Section 2.3.2** of this Submission Report.

Some exceedances of the fluoride criteria were predicted at or near NCIA's boundary as part of the air quality assessment presented in the EA. These predicted exceedances were calculated using the following methodology:

- Each of the eight proposed kilns operating simultaneously at the proposed fluoride concentration limit of 5mg/m^3 (which is expected to be an over estimate of typical operations of the facility, see the recently submitted AQMS, 2010);
- Operation of the eight kilns at the proposed maximum concentrations limits was assumed 24 hours seven day a week for 365 days per year (this assumption is likely to overestimate annual emissions of the facility);
- Operation of the kilns over a full year of hourly dispersion conditions to capture likely worst case dispersion conditions; and
- Maximum 24 hour measured background from three years of ambient monitoring data for fluoride was added to the predicted worst case 24 hour result from the model to provide a cumulative assessment. This assumption is likely to lead to an overestimation of the background level of fluoride (as noted by the Holmes report prepared for the HG submission, page 3).

As required by DECCW, this methodology provides a conservative assessment of the likely worst case impacts of the proposed operations. However, it should be noted that the likelihood of all of these conditions occurring simultaneously for one year is small and hence the likelihood of the predicted worst case exceedances occurring is also predicted to be small.

Additional analysis of the fluoride data predicted by the dispersion modelling was undertaken following the identification of potential exceedances of the 24 hour DECCW criteria. In accordance with the DECCW Approved Methods, a contemporaneous assessment of the predicted fluoride concentrations was undertaken to determine the number of additional exceedances expected as a result of the operation of the Project. Data was sourced from the south east onsite monitoring station to allow the examination of the contemporaneous predictions at and near to the eastern boundary of NCIA.

This additional assessment predicted no exceedances of the 24hr DECCW criteria at the most affected sensitive receptor (Receptor 22 from the EA) as shown below in **Figure 6** which shows the predicted concentrations from the EA air quality model added to measured fluoride concentration from the south east onsite monitoring location.

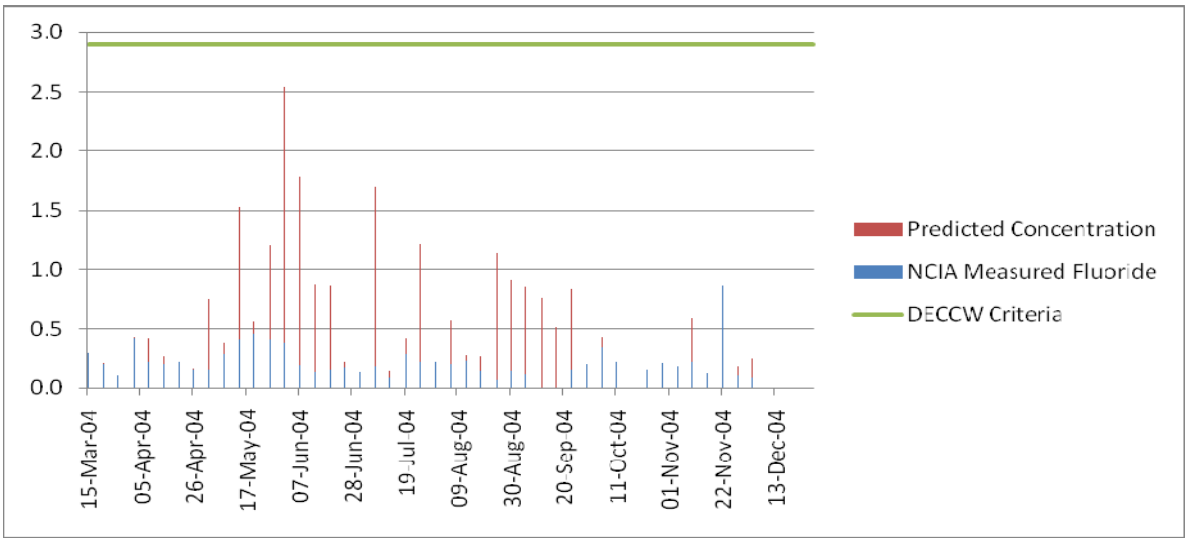


Figure 5: NCIA Predicted Concentrations and Measured Fluoride Concentrations, Plotted Cumulatively and Contemporaneously

The findings of this study show that the expected influence of the Project is low with zero 24 hour average fluoride exceedances predicted as a result of the operation of the Project. Given the variability of the background data this is not expected to result in quantifiable impacts on surrounding receptors or exceedances of the DECW 24 hour fluoride criteria.

4.9 Environmental Impacts: Soil and Water Management

HG Comment:

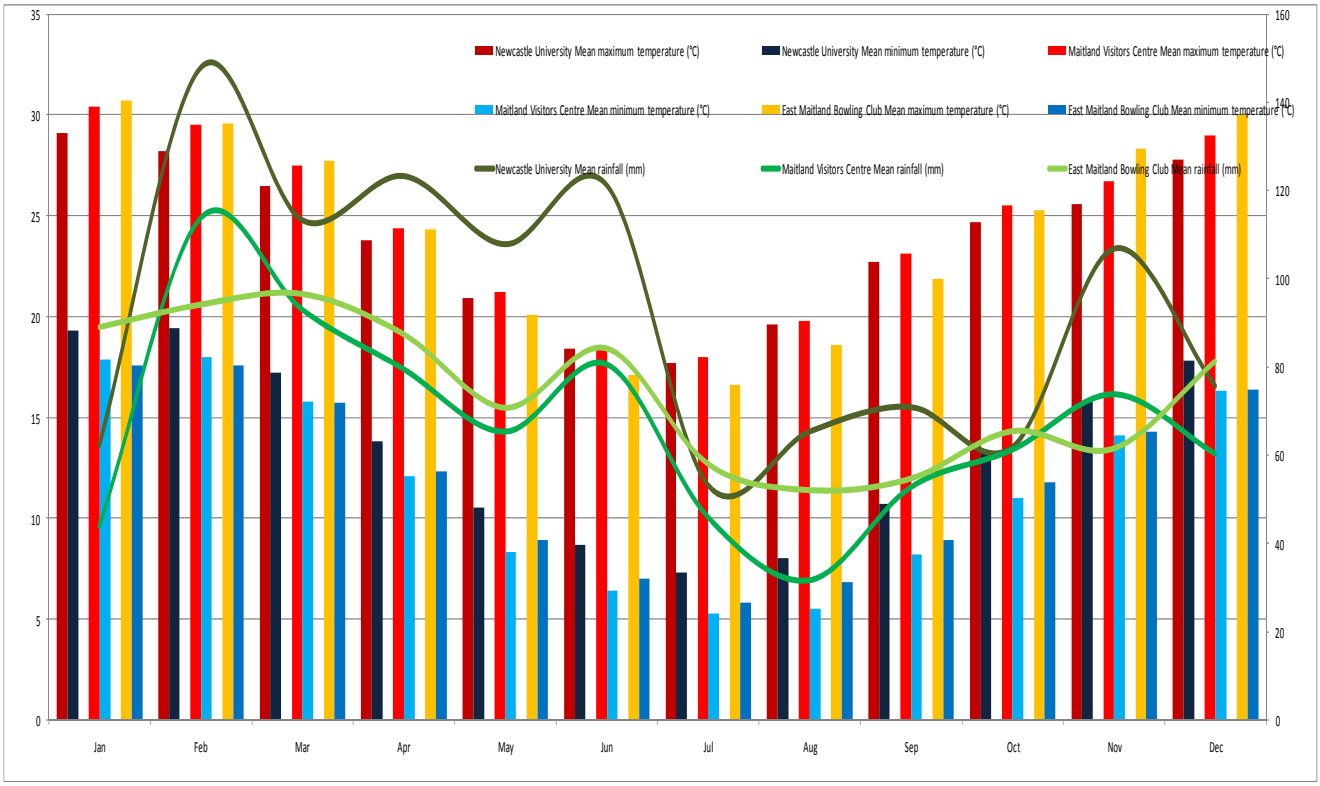
Water Quality modelling is required to demonstrate that the Concept Stormwater Management System meets pollutant removal targets set by Maitland City Council.

Response:

Water quality modelling has been undertaken to demonstrate that the Concept Stormwater Management System outlined in Section 4.3.1 of the Surface Water Management Report (Appendix G of the EA) meets pollutant removal targets set in Section 6.8.2 Stormwater Quality of Maitland City Council *Manual of Engineering Standards 2008, Chapter 6 – Stormwater Drainage*.

A water quality model of the Project has been developed using the industry standard *MUSIC* Stormwater Quality Management Model (Version 4) modelling program. This model was developed with rainfall and evaporation data for the period July 1998 to June 2008 from the nearest station with 6 minute rainfall data, which is located at the Bureau of Meteorology's University of Newcastle Meteorological Station (061390). This station is located approximately 26 kilometres to the south east of the site. A comparison of monthly average temperature and rainfall from the University of Newcastle weather station, with the nearest stations to Rutherford at the East Maitland Bowling Club (061034) and Maitland Visitors Centre (061388), is provided in **Figure 6**.

Figure 6: Climate Data for University of Newcastle Relative to Maitland Sites



The climate data in **Figure 6** shows a lower monthly rainfall for the sites nearer to Rutherford than is present at the University of Newcastle site. This would have the effect of increasing runoff volumes and decreasing pollutant concentrations relative to what would occur on site. AECOM believes this approach is valid as this is the best data available and there is no means of modelling this discrepancy. It should be noted that this will not decrease site pollutant export rates calculated in the modelling, which is the basis for the pollutant target removal rates.

A *MUSIC* water quality model has been developed using the catchment and water quality features shown on Figure 6 of Appendix G of the EA (revised and presented in **Appendix D** of this Submission Report) and within

the *XP-RAFTS* hydrologic model that was used to prepare the Surface Water Management Plan. The Layout of this *MUSIC* model is presented in **Figure 7**.

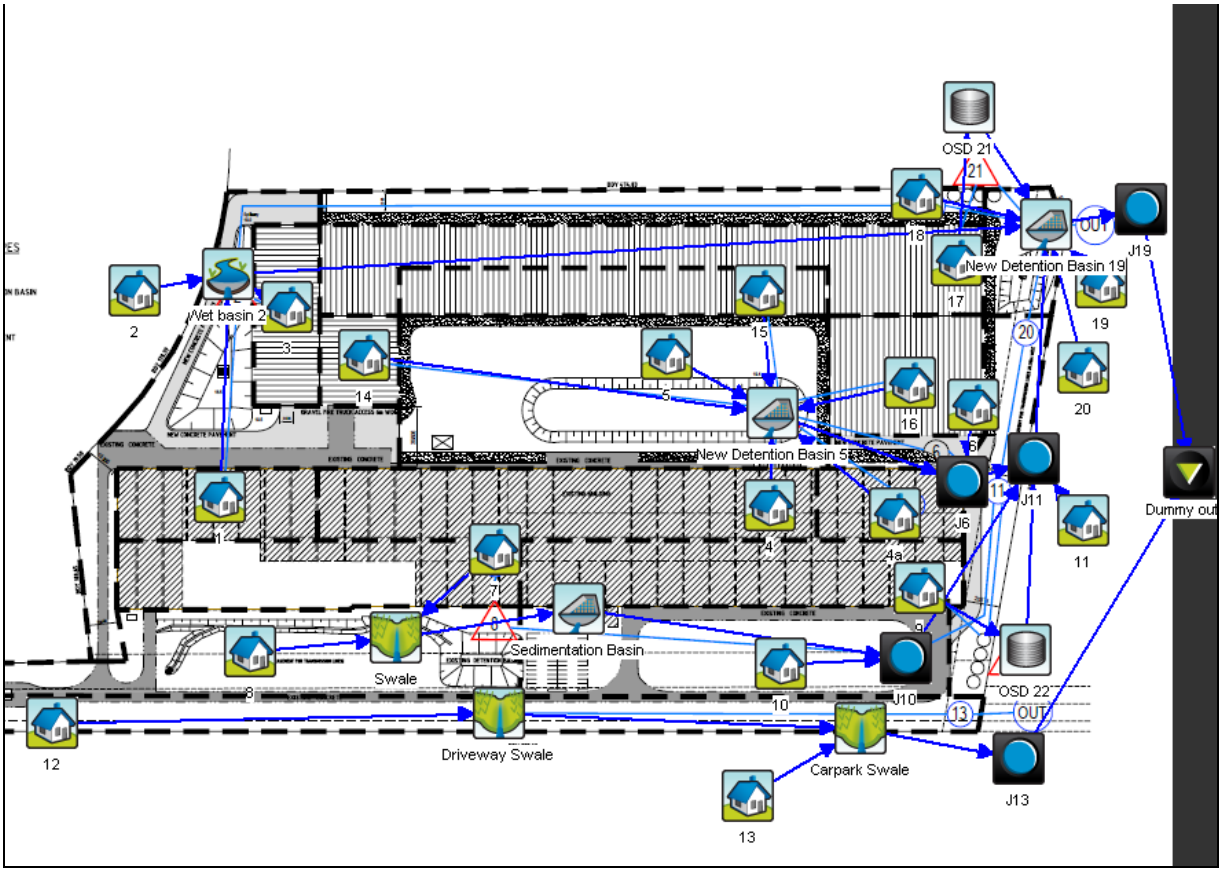


Figure 7: *MUSIC* Water Quality Model Layout

The results of the *MUSIC* water quality model are presented in **Table 11**, along with the pollutant removal targets set in Section 6.8.2 Stormwater Quality of Maitland City Council *Manual of Engineering Standards 2008, Chapter 6 – Stormwater Drainage*.

Table 11: *MUSIC* Water Quality Modelling Results

Parameter	MCC Target % Reduction	Pollutant Load from Site(kg/yr)	Export from Site (kg/yr)	% Reduction
Total Suspended Solids	80	19,200	1,950	89.8
Total Phosphorous	45	39.9	12.3	69.1
Total Nitrogen	45	282	155	45.1
Gross Pollutants	100 (for 3-month event)	2,730	0.0	100

The results of the *MUSIC* water quality modelling indicate that the site water quality measures shown on Figure 6 of Appendix G of the EA (see also **Appendix D** of this Submissions Report) meets the pollutant removal targets set in Section 6.8.2 Stormwater Quality of Maitland City Council *Manual of Engineering Standards 2008, Chapter 6 – Stormwater Drainage.*

HG Comment:

There was no detention modelling for stormwater peak flow attenuation.

Response:

The industry standard hydrologic software *XP-RAFTS* water quantity model that was developed in Section 4.3.2 of the report (Appendix G of the EA) has been checked to ensure all calculations have been undertaken correctly and all catchment boundaries have been correctly defined. This check indicated that the catchments were mapped correctly for the modelling but were not shown in sufficient accuracy on Figure 3 in Appendix G of the EA. A revision of Figures 3 and 6 has been made to incorporate the dimensions of the stormwater controls to the correct scale. The updated figures are provided in **Appendix D** of this Submissions Report. Copies of the models are available upon request.

HG Comment:

There was no investigation of harvesting stormwater to replace potable water for process water demand.

Response:

The roof runoff results from the *MUSIC* water quality model have been used to develop a site water balance model. The water balance model developed is shown schematically in **Figure 8**.

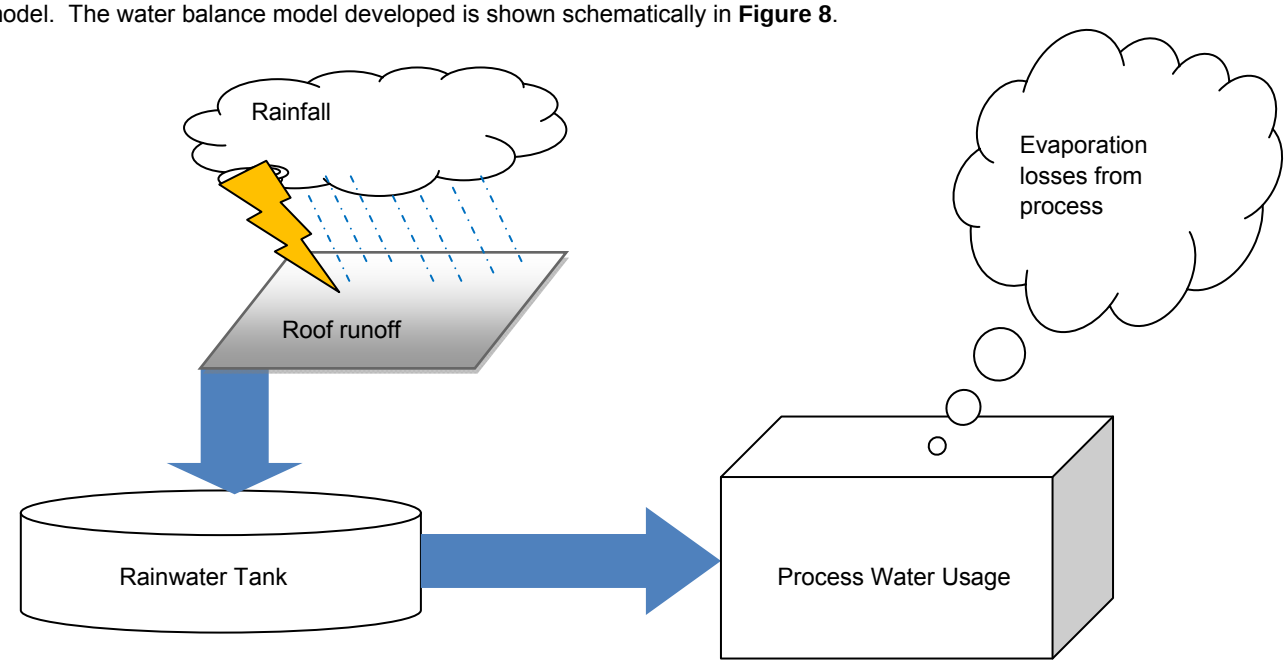


Figure 8: Site Water Balance Schematic

The preliminary water balance calculations indicate that, assuming all roof runoff can be used for process water without losses for the necessary treatment or first flush diversion, rainwater tanks could provide up to a maximum 9% of the annual process water requirement of 184ML. This is based on a possible maximum of 37,829 KL of total annual rain fall harvested (100% of rainfall hitting the Projects roofed areas). The results of the preliminary water balance calculations are presented in **Table 12**.

Table 12: Preliminary Water Balance Modelling Results

Tank Volume (KL)	Yearly Volume harvested (m^3/year)	% replacement of total potable volume used
105	0	0.00
470	4077	0.00
1,000	15,607	2.59
2,500	31,027	6.87
5,000	37,037	8.74
Maximum	37,829	9.01

It can be seen that harvesting of rainwater for use as process water would require a substantial investment for a limited return in possible water savings. That is in order to save around 8.7% of the annual potable water consumption NCIA would need to install around 50 100KL water storage tanks, which are approximately 10 metres in diameter. These tanks and associated plumbing would require a substantial investment and a considerable amount of space (which is limited) for only a minor saving is process water consumption.

It would not be appropriate to use runoff from other areas of the site for process water, as trafficked areas would have the potential to contaminate water supplies.

HG Comment:

Stormwater controls are not drawn to scale on plans, with no demonstrated provision for space surrounding the building footprint.

Response:

A revision of Figure 6 (Appendix G of the EA) has been produced to incorporate the dimensions of the stormwater controls to the correct scale. A copy of the revised Figure 6 is provided with this Submissions Report (see **Appendix D**).

HG Comment:

There is insufficient detail on soil and water management measures to be implemented during construction.

Response:

A Soil and Water Management Plan (See **Appendix D**) has been developed for the site, based on the construction phase water quality mitigation measures outlined in Section 5.2.1 of the Surface Water Assessment (Appendix G of the EA).

Preliminary sediment basin sizes for the soil types anticipated on site were calculated using the methodology outlined in Chapter 6 of Landcom's *Managing Urban Stormwater – Soils and Construction, Volume 1, 4th Edition March* 2004, colloquially known as the "*Blue Book*".

Soil types underlying the NCIA Rutherford site have been taken from the *Soil Landscapes of the Newcastle 1:250,000 Sheet*. The *Soil Landscapes of the Newcastle 1:250,000 Sheet* shows that there are two soil types on the site, Wallalong and Bolwarra Heights. The constraints and erosion potential of these soil types in the "Blue Book" is presented in **Table 13**.

Table 13: Soil Characteristics

Soil Landscape	Common Constraints	Sediment Type	K-factor USLE	Soil Hydrologic Group
bh Bolwarra Heights	High erosion hazard; localised steep slopes contribute to mass movement, high run-on and water logging of lower slopes; localised shallow soils and rock outcrop; risks to foundation.	Type F	0.022 – 0.045	C
wg Wallalong	Localised shallow soils and rock outcrop; high run-on, high water tables and seasonal water logging in low areas; generally high erosion hazard; general foundation hazards – sediment.	Type D	0.032 – 0.047	B/C

The preliminary Soil and Water Management Plan has been developed using the basin design methodology outlined in the Blue Book for Type F/D soils. Typical control details and advisory notes have been included in the Soil and Water Management Plan, provided as Figure 7 and S1 in **Appendix D**.

The main control for sediment from the disturbed areas of the site will be use of sediment basins (shown in detail on Figure S1 of **Appendix D**). At the completion of the construction and stabilisation of the site, the sediment basins will be converted into the sediment basins shown on the revised Figure 6 in **Appendix D** for the operational phase of the Project.

As the staging of the works is not finalised at present, a typical erosion and sediment plan has been included (see **Appendix D**). Sizes and locations of detention basins are preliminary only and are not to be used as a guide for construction. The requirements of a CEMP are generally included in the conditions of approval.

HG Comment:

There is insufficient detail on maintenance regime of stormwater control devices.

Response:

Detailed maintenance regimes for the management of stormwater control devices will be incorporated in the Construction Environmental Management Plan (CEMP) for temporary construction devices and within site maintenance plans for the operational phase. It is not possible or appropriate to develop details on maintenance regimes at the concept design stage.

4.10 Environmental Impacts: Visual Impacts

HG Comment:

Prior to any further assessment of the current proposal, the Proponent should be required to provide:

a) *a detailed schedule of external materials and finishes, demonstrating the use of more recessive colours (greys and green-greys) for the proposed building. Strict control of the colour palette on the expanded facility will assist in mitigating the visual impact from Heritage Green and environs;*

b) *details of architectural devices, including variety of cladding materials, to be employed to break up the large expanse of wall presenting to the east of the site;*

c) *a detailed landscape plan.*

Response:

Specific details regarding building colours and materials would be determined in consultation with DOP as part of the process of finalising the conditions of approval. NCIA commits to minimising the visual impact of the Project as much as reasonably possible via implementation of the various mitigation measures committed to in the EA, which are:

- Planting of native vegetation around the perimeter of the site would be undertaken in locations unaffected by buildings, internal road ways or infrastructure easements to assist in screening outside views;
- The use of appropriate building materials and colours to blend with the surrounding environment and reduce the visual dominance of the building;
- Lights would be placed and designed to avoid causing glare or excessive light spillage on neighbouring sites;
- Lighting near adjoining properties where appropriate would be shielded with cut off luminaries;
- Building illumination would be discrete; and
- Lighting to car park areas and for security purposes would be low intensity.

NCIA has an existing Landscape Management Plan which forms part of the existing facilities Operation Environmental Management Plan (OEMP). Upon approval, the existing Landscape Management Plan would be updated to incorporate the native vegetation planting committed to in Section 14.1.3 of the EA. This plan would be submitted to DOP for approval.

HG Comment:

*Prior to any further assessment of the application, the Proponent should be required to respond to the comments provided in **Table 14**.*

Response:

Table 14: Visual Assessment Requirements

HG Comment	Comment / Response
Engage in detailed consultation with the McCloy Group and gain access to the Heritage Green site to make a full and proper assessment of the visual impact of the proposed development, which should include photomontages from agreed locations within the Heritage Green site.	The visual assessment prepared as part of the EA (Appendix H of the EA) made an assessment of the HG site and this is also presented in Section 13 of the EA. The visual impact on HG is considered acceptable based on: • Context of the HG site immediately adjacent the industrial estate; • The new building would largely screen the existing building; and • The existing earth bund with existing bamboo screen planting. The HG development is sited lower than the Project. This combined with the existing earth bund and substantial vegetation plantings adjacent to the southern and eastern site boundaries would significantly mitigate the visual impact of the Project from the proposed HG. It is considered that additional assessments and photomontages are not warranted in this instance.
As required, undertake modifications to the proposal including: appropriate siting of the proposed development ensuring that setbacks are adequate to allow for the provision of effective landscaping, and a reduction in visible bulk and scale of the building.	The Project is sited in the most operationally efficient manner to maximise the efficient use of the space available. Reasonable setbacks are provided to enable additional landscaping on the eastern site boundary. The scale of the building is appropriate in the context of the Rutherford industrial Estate. The visual impacts of the Project are considered to be comparable to that of the existing facility and modifications as suggested are deemed unwarranted in this instance.
Provide details of proposed materials and finishes that address the above.	Specific details regarding building colours and materials would be determined in consultation with DOP as part of the process of finalising the conditions of approval. NCIA commits to the use of appropriate building materials and colours to blend with the surrounding environment and reduce the visual dominance of the building.
Provide a detailed landscape plan which illustrates proposed soft and hard landscape treatments, including the implementation of screen planting.	Upon approval, the existing Landscape Management Plan would be updated to incorporate the native vegetation planting committed to in Section 14.1.3 of the EA. This would be submitted to DOP for approval.

HG Comment	Comment / Response
Undertake an assessment of lighting associated with the NCIA expansion in terms of its impact on the Heritage Green site and provide specific details on how such impacts will be addressed.	NCIA commit to the following mitigation with regard to lighting: • Lights would be placed and designed to avoid glare or excessive light spillage on neighbouring sites; • Lighting near adjoining properties where appropriate would be shielded with cut off luminaries; • Building illumination would be discrete; and • Lighting to car park areas and for security purposes would be low intensity. The updated Landscape Management Plan, which would be approved by DOP, will include details of onsite lighting.

HG Comment:

It should also be noted that to date all the existing visual screening is provided by the McCloy Group, all of which occurs within the boundaries of the Heritage Green site. NCIA has taken no responsibility for improving the visual or landscape amenity of the wider locality.

Response:

There has been no need to provide landscaping to date on the eastern and southern boundaries as no development on the HG site has been approved. NCIA would commit to landscaping the site boundaries in accordance with Section 14.1.3 of the EA upon approval.

With regards to the earth bund along the eastern and southern NCIA boundaries, this was created at the expense of NCIA during the construction of the existing facility. The material used was provided by NCIA and the machinery used was financed by NCIA.

4.11 Traffic and Parking

HG Comment:

It is considered that the Proponent has provided inadequate justification in respect to a proposed significant variation in car parking provision. Information is lacking in relation to details such as employee density, including details of shift overlap periods when the demand for on-site parking is higher.

Further justification should also be provided which examines the possible need for (and the space requirements associated with) the provision of additional on-site parking as the result of incremental intensification by changes in future operations (or use) of the facility.

Response:

Based on the limited staffing requirements in relation to the ground floor area of the proposed factory building, and the precedent set by the approved development, parking provision provided at the rate of one space per two employees is considered appropriate. Based upon achieving the total staff numbers onsite of 140 and the shift change over times detailed in Section 11 of the EA it can be seen that a parking provision of 70 spaces would prove more than adequate. It is considered that additional justification of the proposed car parking provision is not warranted in this instance.

Notably no parking issues have been raised by the MCC or the RTA.

It is considered that additional assessments of parking requirements based on unknown or undefined changes in future operations (beyond that defined in the EA) would not provide any meaningful or beneficial information. If NCIAs operations are to be modified beyond the scope of the EA, additional traffic and parking assessments would be commissioned to properly address and planned changes in operation as part of the development application process.

4.12 Sustainability

HG Comment:

The DGRs require the proposal explore and incorporate appropriate water and energy efficiency measures to ensure the longer term sustainability of a substantial industrial development. We submit that the proposal has inadequately responded to these requirements.

Response:

Water Use

The cumulative demand for the Project (Stages One - Eight) for potable water would be expected to be approximately 3,544 kilolitres per week (184ML per annum). Roof water from limited roof catchment areas would be collected in guttering and directed to a series of large 105 kL rainwater tanks proposed to be located as indicted in Figure 4 of the EA. However based on the average rainfall, and as discussed in **Section 4.9,** in excess of approximately 50 such rainwater tanks would be needed to replace 9% of the predicted potable water use of Stages One-Eight. This option has been considered, however due to low rainfall in the Rutherford region and the high cost of this infrastructure, the option to supply the Project's process water from rainwater harvesting was deemed to be an impractical option.

The Project site would utilise recycled wash down water and would adopt new technology (i.e. dry clay glazing) as practical to minimise total potable water demand. No process water or waste water would discharged from the Project into drainage easements or the natural creek system. All process water is discharged from the existing facility as steam. All wash down water is collected and recycled into the milling stage of the production process.

As discussed above, the proposed stormwater management system includes rainwater harvesting infrastructure to reduce reliance on potable town water. Multiple (notionally eight), large rainwater tanks would be placed to capture some of the roof water runoff. Each of the proposed rainwater tanks includes 25% of the total volume dedicated to the capture and storage of roof runoff for reuse purposes. This equates to approximately 210 kL available storage for stormwater reuse on site. These rain water tanks would not be sufficient to meet the process water needs of the Project, however they would supplement NCIA's potable water requirements in relation to irrigation of existing and proposed site revegetation and landscaping and possibly staff toilets and amenities.

As the harvesting of rainwater has been deemed inappropriate for supplying the facility's process water, a treatment plant for rainwater has not been considered.

Energy Efficiency

NCIA commits to preparing an Energy Efficiency Action Strategy (ESAP) under *the Energy and Utilities Administration Act 1987* No 103 Part 6A which would include an analysis of energy use and strategies to minimise electricity consumption.

NCIA proposes to implement the tile manufacturing process technology known as Continua from Italian plant manufacturers Sacmi. Sacmi has developed three energy recovery systems applicable to all the latest generation kilns which would be implemented as practical. The installation of plant with these energy recovery features would result in greater energy efficiency when compared to the installed plant and equipment in the existing operations.

NCIA was unable to obtain sufficient details regarding the desired co-generation plant to adequately assess the potential environmental impacts. Therefore the integration of co-generation facilities into the scope of the Project has not occurred. It is anticipated that a separate application would be made in the future for this element of the plant.

NCIA commits to designing and developing the Project in a way that would enable the future integration of electricity cogeneration plants across the production lines (both approved and proposed). The co-generation plants would most likely be located at the clay preparation / spray drier area (northern end of the factory building, see Figure 5 of the EA). It is envisaged that the co-generation plants would generate electricity and also capture the waste heat from the turbine, which would be used to operate the spray driers.

4.13 History of Environmental Performance

HG Comment:

A review of the Annual Environmental Management Report (AEMR) prepared by ENSR AECOM in September 2008 indicate a number of areas of non-compliance with both the predictions set out in the Environmental Impact Statement and the subsequent consent.

Response:

NCIA is committed to operating in compliance with it licence and other regulatory requirements. NCIA acknowledges its former non-compliances with regards to its consent and EPL, and has committed to implementing mitigation measures that would ensure the existing licence conditions are adhered to. The recently submitted AQMS (2010) is an example of NCIA's environmental commitment which demonstrates compliance with all particulate and fluoride emissions limits.

NCIA has implemented a cycle of continuous improvement (Monitoring → Review → Mitigation → Compliance) with recent succuss demonstrated in the AQMS (2010).

4.14 Social and Economic Impacts

HG Comment:

The Major Project Application form states that at the time of lodgement, the NCIA facility employed 70 staff. CIL's 2009 Annual Report states employment coinciding with the time of lodgement as 49 staff. The EA states employment as 50 staff…… NCIA should be required to provide evidence substantiating its current and projected employment.

Response:

The Major Project Application form states that the Project (Stages 5-8) would generate 50 construction jobs and at full operation 70 full time employees.

Employment is discussed in Section 14.5 of the EA. The existing facility (Stages One – Two) currently employs approximately 50 staff. An additional 20 employees are likely to be engaged following the full implementation of the approved facility (Stages One – Four).

The additional 70 employees from Stages 5-8 would result in a total future workforce of approximately 140 employees.

HG Comment:

NCIA has not adequately explained the economic rationale for this forecast imbalance in the labour input and resulting output.

Response:

NCIA acknowledge that the yearly production figures in the 2009 CIL Annual Report are incorrect. Accurate yearly production figures are reported annually to DECCW in the facility's Annual Returns. These are available to NCIAs website. However the 2009 CIL Annual Report also states (page 16):

> *It (NCIA) has an annual production capacity of 6.0 Million m^2 from 2 kilns.*

This statement correctly identifies NCIA's approximate current maximum production from two kilns, which is in line with their existing consent and the information presented in the EA.

4.15 Impact on Development Potential of Adjoining Sites

HG Comment:

We are instructed that the McCloy Group acknowledges the importance of employment-generating industrial development to the local, state and national economies. However, such activity must be undertaken in a sustainable and environmentally responsible manner. As both Council and the state government have acknowledged the capability of the Heritage Green site to achieve a certain level of residential development, the Proponent should be required to design the proposed expansion of the NCIA facility in a manner which allows for both uses to proceed, which would be in the broader interests of the state and the Lower Hunter region.

Response:

Based on the information provided in the Submissions Report regarding the limited predicted air quality impacts (see **Section 2.3.2** and **Section 4.8**) and further mitigated noise amenity impacts (**Section 4.7**) it can be seen that NCIA has designed the Project responsibly and with due regard for the environment and the development potential of the adjoining HG site.

Under Clause 52 of the Maitland LEP, the onus is also on the developer of HG to consider measures to be undertaken to guard against potential disturbances from rail and industrial development. This should include sensitive site layout and design of the proposed subdivision. AECOM agrees with DECCW when it stated in its submission to the EA (page 6) that DOP should advise MCC to require mitigation measures such as:

> *residences being designed to meet noise criteria in the Department of Planning's Infrastructure SEPP and associated guidelines, for buildings adjacent to busy roads and railways.*
>
> *or,*
>
> *MCC 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 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 the NSW guidelines.*

DECCW has also advised DOP to advise MCC to attach Section 149 certificates to all properties if it approves the HG development, advising that the properties are adjacent to an industrial area and subject to noise and air quality impacts.

4.16 Section 94A Contributions

HG Comment:

The legislation clearly authorises Council to seek contributions pursuant to section 94A of the Act where there is no nexus between the demands that may be generated by development and facilities to be provided by Council.

Response:

The EA addresses the issue of Section 94A contributions (see Section 4.9.6 of the EA) and in **Section 2.3.4** of this Submissions Report.

Section 94A contributions as defined in the *EP&A Regulation 2000* states that developments in excess of $200,000 are liable for the maximum 1% levy on the total cost of the development (as stipulated in 25K of the Regulation).

As discussed in **Section 2.3.4** it is considered that a development levy of $650,000 would be excessive as it is not expected that as a result of the Project MCC would incur any significant additional costs, nor would the local community be disadvantaged or be required to carry the cost of infrastructure upgrades. As a result it is considered that a 1% levy would be excessive.

5.0 General Public

5.1 Armstrong

Armstrong Comment:

We at J&S engineering strongly support the proposed extension to the tile Factory. It will be good for the industrial estate, businesses and the community. We would certainly like to see more of this type of development approval rather than the proposed housing estate (heritage green) which if given the go ahead will threaten all businesses in the area.

Response:

Noted.

5.2 Brown

Brown Comment:

I live only 500 m away from this plant. It emits noise particularly at night. It also emits fine dust which can be seen late in the afternoon with the sun setting behind it and at night, this is not to be confused with steam which does emit from the same stack. One of the conditions for the approval of the original factory was that landscaping (trees and vegetation where to be established) but none of this has ever be done. So we have A big tin shed on a baron block of land , the only buffer was done by the owner of the now closed golf club, It is a visual eyesore and polluter for the residents of West Rutherford and should be refused any further expansion.

Response:

NCIA has approval to operate 24/7, however the noise emissions in the night period are reduced when compared to the day period due to delivery and dispatch trucks not operating. NCIA operates fabric filter baghouses to control the emissions of particulate matter. This type of emission control equipment is planned for the Project. This technology has proven to be effective in controlling particulate emissions to within EPL limits. Vegetation planting has been implemented on the NCIA site and this discussed in the EA in Section 14.1.3. The EA also commits to additional onsite native vegetation planting. The existing earthen bund surrounding the southern and eastern NCIA site boundaries was developed by NCIA, on behalf of the former golf course with excess fill from the construction of the existing facility.

5.3 Kerrigan

Kerrigan Comment:

Total expected emission of fluoride.

Response:

The EA provides an emission rate of fluoride for each kiln in gram per second. This figure could be used to calculate the total expected emission of fluoride in kilograms per year. The actual load of fluoride is reported annually in the Annual Return to DECCW. The Annual Returns are available for download form NCIA's website.

Kerrigan Comment:

Consideration of the effects of atmospheric emissions production in amenity, horticultural activities and or home vegetable garden activities.

Response:

The assessment criteria chosen for fluoride emissions was the general land use criteria listed in the DECCW Approved Methods for modelling and assessment of pollutants in NSW, which is based around impacts on vegetation, not human health impacts and as such this criterion can be considered conservative. This is because vegetation is much more sensitive to fluoride than humans, so if vegetation is protected so is human health.

The Air Quality Impact Assessment was undertaken in accordance with DECCW guidelines and has been deemed adequate by DECCW above in their comments in their submission to the EA.

5.4 Community Petition Submissions

Three hundred and ten submissions were made on a preformed letter which can be seen in **Appendix A** of this report. Only those with additional written comments have been included in **Appendix A**.

Comment:

I, xxxx, of xxxx, oppose the application to expand National Ceramic Industries Australia's tile factory if the approval will allow the tile factory to emit more pollution into our environment.

Response:

NCIA currently operate under very stringent emissions limits, in fact these limits in some cases are many times more stringent than the approved Group 6 limits imposed by DECCW (Group 6 limits apply to equipment installed after 1 September 2005). DECCW has stated that they do not oppose the NCIA expansion and have recommended certain consent conditions. These include keeping the emissions limits for the Project at the rates currently applied by NCIA's existing consent for the approved development. These stringent limits would help ensure that the minimal adverse air quality impacts identified in the EA do not significantly impact nearby residents in Rutherford.

All reasonable and feasible mitigation measures are proposed as part of this EA and are presented in **Section 6** of this Submissions Report. Once implemented they will help minimise the impacts of the Project to within the limits specified in the conditions of approval and EPL.

Comment:

I am extremely concerned with the odour, noise, fluoride and air pollution in the Rutherford area and oppose the government allowing more pollution to enter our environment.

Response:

NCIA does not use any odorous materials during the tile manufacturing process nor is the ceramic tile manufacturing industry known for creating any odour issues. NCIA does not consider odour from its premises to be a concern for any residences in Rutherford.

The background levels of fluoride and particulates in the Rutherford region are elevated due to the coal mining, electricity generation and aluminium industries in the Hunter Valley. As mentioned previously, the air quality assessment, and the additional air quality information provided in this report (refer **Section 2.3.2** and **Section 4.8**) show that the adverse impacts from fluoride and particulate emissions are predicted to be minimal at existing residential areas.

The noise assessment (Appendix E of the EA) did not predict adverse noise impacts, beyond what has already been approved at any existing residential areas and additional noise mitigation measures have been recommended as part of this Submissions Report (**Section 6.0**.

Comment:

Additional hand written comments were provided on 13 of the petitions submissions that related to noise, air quality, odour and health impacts.

Response:

It is considered that where relevant the additional hand written comments have been adequately addressed throughout this Submissions Report.

6.0 Revised Statement of Commitments

Table 15: Revised Statement of Commitments

Issue	Safeguard
Air Quality	**Construction** A Construction Environmental Management Plan (CEMP) would be prepared prior to commencement of construction of the project. The CEMP would include as a minimum: • Control of access via sealed roadways; • Vehicle speed limits on site; • Avoid dust-generating activities during undesirable conditions; • Minimisation of areas of disturbed soils during construction; • Dust suppression with water sprays or other media during windy periods (as required); • Stockpiling of soils on site kept to a practical minimum; • Construction equipment idling time minimisation and appropriate engine tuning and servicing to minimise exhaust emissions; and • Procedures to address any complaints received. **Operation** NCIA commits to the stringent air emissions concentration limits required of the approved facility for the project as detailed in the existing development consent as modified. Additionally: • Dust extraction baghouses would be integrated with the kiln stacks; • Fluoride emissions would be managed within the kiln baghouses by implementing a mechanism where a fine spray of lime is injected into the kiln exhaust flow to scrub the HF emissions; - Lime used in the baghouse would have a high percentage of Calcium available for scrubbing of HF; - Installation of additional monitoring points to monitor baghouse operational parameters e.g. pressure drop to allow more efficient tracking of the performance of the baghouses; and - All new production lines will have kiln stack filtration systems positioned internally to the buildings. The aim of this is to ensure more efficient management of the emissions. • Dust extraction baghouses would be integrated with the spray dryers; • Fabric filters would also be implemented on the extraction fans located adjacent to the selection line; • NCIA would continue their vegetation monitoring program as required by their existing consent and Environment Protection Licence; and • The clay preparation area would be located inside the factory building.
Greenhouse Gas and Energy Efficiency	• An Energy Savings Action Plan would be prepared; • New generation kilns would be installed that incorporate new energy recovery systems; and • The project would be designed to allow for the addition of electricity cogeneration facilities by way of leaving space and allowing for easy connection and integration at a later date.

Issue	Safeguard
Noise	• The project would commit to and adopt the operational noise criteria outlined in the EA and the Submissions Report; • Increased thickness of metal sheeting to 0.48 BMT on the east façade, south façade and roof (previous assumption in noise model was 0.3 BMT) with 55 mm insulation fixed to underside of roof; • Existing dust extractor to be enclosed; • Alsynite roofing on the proposed main building located only on the west section of the roof. This is assuming the roof is pitched and therefore the alsynite panelling is angled away from Heritage Green receivers to the east; • No alsynite panels on the east and south walls of the proposed Mill & Pray Dryer section of the building; • No truck deliveries of raw products or final product despatch would occur during the night time period (night-time 10.00 pm to 7.00 am); • Electric, laser guided forklifts would be utilised to transport final product from the proposed factory building to the product despatch area of the existing building; • The transport route for both forklifts and delivery/product despatch truck would be designed to minimise the need for reversing and, as such, the use of reversing alarms; • The bag-houses for the proposed kiln stacks would be located inside the proposed factory building; and • The proposed dust extraction unit, located on the southern end of the eastern wall of the proposed factory building, would be enclosed to reduce noise emission to the east and south.
Traffic and Parking	• The onsite car parking would be increased to 70 spaces to ensure adequate provision is provided for all staff and visitors and all new spaces would be provided in accordance with AS2890.
Hazard and Risk	• The existing site emergency plan would be updated as required to include potential incidents at the expanded facility, including gas releases/fires and diesel releases/fires; and • Fuel handling management procedures would be included in the revised site Operational Environmental Management Plan.
Soil and Water	• Wet detention basins would be provided with the dual function of reducing peak stormwater flows and improving water quality by settling of sediment prior to discharge; • Rainwater tanks would be provided with the function of reducing peak stormwater flows; • Grass swales to collect runoff from beside roadways, to connect between the wet detention basins, to reduce runoff velocities, to provide some infiltration of water, and for water quality improvement; • Ground area disturbed would be minimised at any one time during construction and progressive rehabilitation/ landscaping of completed areas; • The volume of water required to be handled would be minimised by diverting clean water around all disturbed areas; • The surface of all areas required for construction traffic, parking, storage and amenities would be treated to provide adequate drainage and prevent soil loss; • Provision of sedimentation traps and fencing to capture and treat runoff from all disturbed areas would be provided, including a regime for inspection and removal of accumulated sediment; • Storage of potential contaminants (i.e. fuels, oils or chemicals) would occur offsite or within bunded, covered and lined areas;

Issue	Safeguard
	• The construction and operation of the project would not concentrate or lead to an increase in the rate of flow of stormwater discharged from the site over and above the predevelopment flow conditions; • An Acid Sulfate Soils Management Plan (ASSMP) would be prepared in accordance with the Acid Sulfate Soil Planning Guidelines (NSW Acid Sulfate Soils Management Advisory Committee, 1998) prior to the construction of Stages Five – Eight; and • The preliminary Soil and Water Management Plan and Erosion and Sediment Control Plan (Appendix D of the Submissions Report) would be generally followed and implemented during construction and operation.
Visual	• Planting of native vegetation around the perimeter of the site would be undertaken in locations unaffected by buildings, internal road ways or infrastructure easements to assist in screening outside views; • The use of appropriate building materials and colours to blend with the surrounding environment and reduce the visual dominance of the building; • Lights would be placed and designed to avoid causing glare or excessive light spillage on neighbouring sites; • Lighting near adjoining properties where appropriate would be shielded with cut off luminaries; • Building illumination would be discrete; • Lighting to car park areas and for security purposes would be low intensity; and • The updated Landscape Management Plan will include details of onsite lighting.
Ecology	• NCIA would continue its vegetation monitoring program for fluoride as required by their existing consent and EPL; and • NCIA would finalise their onsite revegetation generally in accordance with Figure 4 of the EA and as described in Section 14.1.3 of the EA.
Aboriginal Heritage	• Even though no areas or objects of Aboriginal cultural heritage significance have been identified within the project site, there still remains the potential (albeit very low) that there may be Aboriginal cultural objects below the ground surface. Agreed management procedures for unexpected finds (identified in the EA and the Submissions Report) will provide an effective way to minimise project impacts on unrecorded Aboriginal cultural heritage. Procedures for the Discovery of Archaeological Deposits and the Discovery of Human Remains are detailed in Section 14.3.1 of the EA (and refined in **Section 2.1.6**.of the Submissions Report) and would be implemented during the Project.
Environmental Monitoring	• NCIA would continue their vegetation monitoring program as required by their existing consent and EPL; and • NCIA would negotiate with DECCW and DOP an appropriate Environmental Monitoring program.
Environmental Management and Reporting	• The existing site OEMP and environmental management plans would be reviewed, modified and updated to include the project; and • NCIA would continue with its environmental reporting and auditing requirements as specified in the existing development consent (where possible).

"This page has been left blank intentionally"

7.0 References

AECOM (2010) National Ceramic Industries Australia Air Quality Mitigation Study, Newcastle.

Department of Environment and Conservation (DEC) (2005) *Guidelines For Aboriginal Cultural Heritage Impact Assessment and Community Consultation*. Department of Environment and Conservation, Sydney.

Department of Environment and Conservation (DEC) (2007) *Part 3A EP&A Act Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DRAFT)*. Department of Environment and Conservation, Sydney.

Department of Planning (1994) *Applying SEPP33 – Hazardous and Offensive Development Guidelines*

European Commission (2006) *Integrated Pollution Prevention Control – Reference Document on Best Available Techniques in the Ceramic Manufacturing Industry*, Sevilla, Spain.

Landcom (2004) Managing Urban Stormwater – Soils and Construction Volume 1, 4th Edition.

"This page has been left blank intentionally"

Appendix A

EA Agency Submissions

"This page has been left blank intentionally"

NSW GOVERNMENT | 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 Water[1] (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 (Mm^2) of tiles per annum to an overall output of 25.6 Mm^2 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.

PO Box 488G Newcastle NSW 2300
117 Bull Street, Newcastle West NSW 2302
Tel: (02) 4908 6800 Fax: (02) 4908 6810
ABN 30 841 387 271
www.environment.nsw.gov.au

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

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 PM_{10} 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 $5mg/m^3$, 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:

(a) 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

(b) 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

(c) 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 (O2)

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 (asSO3)	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 PM_{10} 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 monitoring[2]

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 Limits[3]

		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:

a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or

b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or

c) Stability category G temperature inversion conditions.

21. For the purposes of condition 17:

a) 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.

b) 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:

(a) 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;

(b) The noise monitoring equipment used at a location shall be placed in a position:

(i) 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 $L_{eq(15\ minute)}$ noise limits in condition 17; or

(ii) that is within 1 metre of a dwelling façade at a location to determine compliance with the $L_{A1(1\ minute)}$ noise limits in condition 17; and

(iii) 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 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

Hunter Water Corporation
ABN 46 228 513 446
Customer Enquiries 1300 657 657
enquiries@hunterwater.com.au

PO Box 5171
HRMC NSW 2310
36 Honeysuckle Drive
NEWCASTLE NSW 2300

2 September 2010 Ref: 2010-771

NSW Department of Planning
GPO Box 39
SYDNEY NSW 2001

Attn : Christine Chapman

Dear Christine,

RE: PART 3A ENVIRONMENTAL ASSESMENT ADVICE - PROPOSED EXPANSION OF THE EXISTING TILE MANUFACTURING FACILITY AT 175 RACECOURSE ROAD RUTHERFORD

As requested, Hunter Water has reviewed the environmental assessment for the expansion of the existing Tile Manufacturing Facility in Rutherford. The report outlines water consumption estimates as well as indicating the nature and extent of wastewater discharge as follows:

4.9.4 Water

- Based on actual water consumption stages 1 – 4 when complete will use 1772 kL/week (253kL/day) and stages 1 – 8 would use 3544 kL/week if approved.
- Investigations are ongoing into rain and storm water use. These would at a minimum supplement existing water usage.

4.9.5 Sewage System

- Existing sewage discharge is related to staff amenities. There would be no trade waste or process water discharge from the proposed facility.

However no accurate information on timing for the proposed development was supplied due to the demand driven nature of the development. Therefore, Hunter Water can only provide general comments at this stage.

Summary: Part 3A – Expansion Proposal

- *Water Supply* –There are current capacity limitation within this system to service this development. However, Hunter Water's forward capital program will provide capacity when completed in 2011/12
- *Wastewater Transportation* – There are capacity limitations in the wastewater system however this not likely to be an issue

WATER DELIVERY

It was assumed for this investigation that the expanded facility would utilise the existing water connection at the site. This was assumed to be the DN150 watermain in Racecourse Road which is within the Buttai Res Water Supply System. The following advice is offered based the current water supply computer model as well as the estimates provided in the environmental assessment. Based on the figures provided in the report the ultimate demand from the facility will be 647 ET, while the current computer model for the Buttai Res System has a current demand of 192 ET.

The supply capacity to the Rutherford Industrial Estate area is adequate to cater for significant further development within the estate. This is via the DN500 trunk main and reticulations mains to a minimum of DN150. In particular there is sufficient capacity for the ultimate demand from this development. However there are low pressure issues in the surrounding area that further demands in Rutherford will impact on. The Hunter Water forward capital program has identified works to construct a new reservoir at Windella that will provide capacity in Rutherford and the low pressure areas into the future. The Windella Reservoir will allow this development to be serviced while not compromising pressure available at other locations and is currently scheduled to be completed in 2011/12. There may be capacity available for an additional production line to commence operation in the interim period before this work is completed. This will be determined when a Section 50 application is lodged, and will take into consideration other developments in the area and how this is impacting on the existing low pressure areas.

The report briefly outlines investigations into alternative water supply options. Alternative water sources can pose a contamination risk to Hunter Waters supply network if the appropriate backflow prevention measures are not in place. Planning has no objection to the use of alternative water supply options, provided the appropriate backflow prevention measures are in place. Details of Hunter Water's backflow prevention requirements can be obtained from the Treatment Operations group.

WASTEWATER TRANSPORTATION

The proposed development is located within the Farley WWTW catchment and the Maitland 14 WWPS catchment. The Maitland 14 WWPS is theoretically overloaded. It was assumed based on the report that the only additional wastewater discharge would be generated by additional staff required to operate the facility. Based on this assumption there should be no issues in regard to wastewater transportation and treatment however this will be confirmed upon application for Section 50.
The report also states that there is no current trade waste or process water discharged to the wastewater system, Planning has confirmed with the Treatment Operations group that there is currently no Trade Waste agreement for the existing facility.

Hunter Water has no objections to the proposed development application; however the developer should continue to liaise with Hunter Water regarding the development..

If you have any enquiries, please do not hesitate to contact Stephen Glynn on 4979 9525.

Regards,

Stephen Glynn
Account Executive Major Development
stephen.glynn@hunterwater.com.au
Tel: 02 4979 9525
Fax: 02 4979 9711

MAITLAND CITY COUNCIL

PCU013540

Our Ref. 103/1/4 (752596)

Your Ref.

Phone Enquiries: 4934 9700

10 August 2010

Department of Planning
GPO Box 39
SYDNEY NSW 2001
Attention: Christine Chapman

Dear Christine,

RE: MP 09_0006 – Proposed Expansion of Ceramic Tile Manufacturing Facility (National Ceramic Industries Australia – NCIA), 175 Racecourse Road Rutherford

I refer to the above Part 3A application lodged with the Department of Planning and the associated Environmental Assessment (EA) document dated 5 July 2010.

This letter is provided to the Department as Council's formal submission to the EA. While Council does not object to the principle of the proposed expansion of the NCIA plant and recognises the potential economic benefits of the expanded output for the Maitland LGA, the following issues/comments warrant careful consideration by the Department in its assessment of the application:

Air Quality

Council considers air quality to be a significant issue for the redevelopment particularly due the proximity of the site to the existing residential areas of Rutherford and the adjoining Heritage Green site given its potential for dwellings under Clause 52 of the Maitland Local Environmental Plan 1993.

Conditions 4.5 - 4.7 of the existing development consent for Stages 1-4 of the NCIA plant set very specific requirements in accordance with DECCW guidelines for pollutant discharge concentrations, total load discharges and stack discharge design requirements. In addition, Conditions 5.2 - 5.8 set in place a strict regime of monitoring for ambient air quality, discharge concentration and fluoride as well as requirements for point source and dispersion monitoring and an assessment of air quality mitigation options. It is considered that the existing development consent properly recognised the potential for air quality impacts and imposed an appropriate package of controls to manage and monitor these impacts.

The proponent has modelled two development scenarios in its consideration of air quality under the current development application:

- Scenario 1 – the 'as approved' Stages 1-4 incorporated into the existing building;
- Scenario 2 – the proposed Stages 1-8 to be accommodated within the new building.

Particulate Matter

Council notes that for Scenario 1 there are exceedances in the 24hr PM_{10} criteria (particulate matter less than 10 microns) at Boundary Receptors 1, 2 and 3 and at Residential Receptors 4, 20, 21, and 22 (7 exceedances).

For Scenario 2 there are exceedances in the maximum allowable 24hr average ground level concentrations (GCL's) PM_{10} at Boundary Receptors 1, 2 and 3 and at Residential Receptors 4, 5, 6, 7, 8, 11, 14, 17, 18, 20, 21 and 22 (14 exceedances).

In both scenarios the PM_{10} annual average ground level concentrations (GLC) is compliant with DECCW guidelines at all receptors.

The modelling is based upon GLC's of cumulative particulate matter and the proponent argues that the high level of Scenario 2 GLC's is due to a high level of ambient particulates from other sources and that the contribution to PM_{10} concentrations by the expanded NCIA plant will not be significant. On this basis, the application provides no detail as to specific options to mitigate the increase in PM_{10} GLC's which is indicative of higher particulate discharge from the stacks. The only comment provided is that ". . . NCIA is continuing to investigate options to reduce its particulate and PM_{10} emissions from its kilns as part of improvement plans for existing operations. . ." (pg 34 EA)

Of concern to Council is the gradual increase or creep in ground level concentrations of particulates in proximity to the Rutherford industrial area that could potentially occur where this rationale is adopted. The PM_{10} contribution from the expanded NCIA plant may only be small but it is sufficient to tip the scale from compliance with DECCW criteria to non-compliance at an additional 7 receptor locations some of which are sited well within the established residential areas to the east of Regiment Road. Should applications be lodged for other developments within the Rutherford industrial area then the increased and potentially non-complying PM_{10} GLC's would then become part of the background or baseline PM_{10} for assessing air quality impacts of new development.

The Air Quality Impact Assessment provided with the EA does not map the Scenario 1 PM_{10} GLC contours so it is difficult to gain a full appreciation of the spatial difference in the PM_{10} GLC impacts between the 'as approved' and 'as proposed' development scenarios.

Council maintains its concerns that the PM_{10} levels exceed their recommended criteria in the 24 hour period on 9 out of the 16 existing residential sites, and also on the three boundary receptors. It is also noted that Heritage Green receptors exceed the 24 hour emission requirements, but that the PM_{10} levels are not exceeded at any receptor for the annual period. These levels point to the potential land use conflict between the proposed expansion of the tile plant and the type of development (particularly dwellings) contemplated for the Heritage Green site under Clause 52 of the Maitland LEP 1993.

In an effort to ensure that air quality is maintained at least to current levels, Council requests that the Minister prior to the determination of the application, require the applicant to provide a detailed investigation of mitigation measures to reduce particulate

stack emissions with a view to limiting PM_{10} 24hr average GLC exceedances to those under the Scenario 1 modelling.

Previous environmental reports for the existing NCIA development have identified numerous exceedances in air quality standards. Any new development consent should be conditioned to require strict compliance with specified maximum emission levels and the Council requests that the Minister ensure that the emission benchmarks that are set comply with relevant DECCW/EPA guidelines.

Hydrogen Fluoride

For Scenario 1 modelling hydrogen fluoride (HF) emissions are within regulatory limits for all but the 90 day average which is exceeded at Boundary Receptor 1 and Residential Receptors 20, 21 and 22.

For Scenario 2 modelling the 24hr average ground level concentrations (GLC's) of hydrogen fluoride are exceeded at Receptor 22. 90 day average GLC's of hydrogen fluoride is also exceeded at Receptors 1, 20, 21 and 22.

The EA also states that two areas have been identified within the NCIA vegetation surveys as having visual fluoride impacts – one area approximately 2km north-west of the kiln stack in the vicinity of the Rutherford saleyards and the other area around 2.5km south-east on elevated ground in Gillette Close.

The air quality mitigation strategies for hydrogen fluoride emissions including improved bag house mounts, change of bag house brand, application of different type of lime used in the bag house, installation of additional monitoring points and internally positioned exhaust and filtration systems in lines 3 to 8, are noted.

As with particulates, Council stresses the importance of setting appropriate benchmarks both within any development consent and also within any subsequent Environment Protection Licence (EPL) for HF emissions from the expanded plant. A process of continuous improvement to HF mitigation measures and regular monitoring should also be built into any development consent in order to ensure that the HF emission concentrations are kept below their licensing requirements, particularly as production increases on site.

Any development consent should also retain a condition requiring detailed on-site and off-site monitoring of vegetation for HF impacts.

Noise

The acoustic report in the EA goes to some lengths to describe the various stages of the tile manufacturing process but fails to properly identify the specific sources of noise generation from the plant. This is particularly important in understanding the type of noise and/or its tonal characteristics above and beyond the volume of the noise. For example, a significant noise generator is the discarding of faulty tiles into the disposal bins in the southern section of the site – the characteristics of this noise (as the tiles are being dropped into a steel bin and then when being loaded into a truck for transport off-site) is very different to the constant running of an extraction fan. A discussion of noise types and the potential for some noise sources to be more 'offensive' than others should be addressed.

The existing development consent imposes the following upper limits on noise generation impacts at the nearest affected residences:

- $L_{Aeq\ (15\ min)}$ 41dB(A) Daytime (7am – 6pm)
- $L_{Aeq\ (15\ min)}$ 39dB(A) Evening (6pm – 10pm)
- $L_{Aeq\ (15\ min)}$ 35dB(A) Night (10pm – 7am)

The EA proposes a range of project specific noise goals where the 'Intrusive Criteria' under the Industrial Noise Policy was adopted as the most conservative basis for assessment. Noise goals have been set for the various categories of development within proximity to the NCIA facility:

- Heritage Green (residential)
  - $L_{Aeq\ (15\ min)}$ 48dB(A) Daytime (7am – 6pm)
  - $L_{Aeq\ (15\ min)}$ 48dB(A) Evening (6pm – 10pm)
  - $L_{Aeq\ (15\ min)}$ 43dB(A) Night (10pm – 7am)
- Heritage Green (rec space)
  - $L_{Aeq\ (15\ min)}$ 55dB(A) (acceptable) When in use
  - $L_{Aeq\ (15\ min)}$ 60dB(A) (maximum) When in use
- Residential area (east)
  - $L_{Aeq\ (15\ min)}$ 47dB(A) Daytime (7am – 6pm)
  - $L_{Aeq\ (15\ min)}$ 44dB(A) Evening (6pm – 10pm)
  - $L_{Aeq\ (15\ min)}$ 41dB(A) Night (10pm – 7am)
- Farley residences (south)
  - $L_{Aeq\ (15\ min)}$ 43dB(A) Daytime (7am – 6pm)
  - $L_{Aeq\ (15\ min)}$ 43dB(A) Evening (6pm – 10pm)
  - $L_{Aeq\ (15\ min)}$ 42dB(A) Night (10pm – 7am)

The noise modelling conducted over a range of local climatic scenarios indicates that the noise generation impacts of the expanded tile manufacturing facility will fall within project specific noise goals with the exception of some areas of the adjacent Heritage Green site. The report states that ". . . the degree of affectation will depend on the type of development proposed for different areas of the Heritage Green site" (EA p26). The worst case scenario is under temperature inversion conditions where there might also be some exceedances of existing consent condition benchmarks around Kenvil Close, Rutherford.

With regard to operational noise, Council are concerned at the different project specific noise goals adopted in the EA with respect to the Heritage Green site and the Rutherford residential area and how these will ultimately translate to maximum prescribed noise levels within any future development consent for the expanded tile plant. The EA adopts an $L_{Aeq(15\ minute)}$ night time noise goal of 41dB(A) for the Rutherford residential area, up 6dB(A) from the existing consent – this is considered a significant increase. However, the EA adopts an $L_{Aeq(15\ minute)}$ night time noise goal of 43dB(A) for the Heritage Green site. Given the potential of the Heritage Green site to accommodate a density of development comparable to the Rutherford residential area further to the east it is difficult to appreciate the difference in the noise goals.

The acoustic modelling indicates that maintaining the maximum noise levels under the current consent would be an achievable outcome for NCIA whilever the nearest residences are located in the areas around Kenvil Close and Mountvale Street. However the existing acoustic limits do not factor in the potential for the development of the

Heritage Green site under the Maitland LEP 1993 (up to 450 dwellings subject to achieving specified environmental criteria) and maintaining the current limits would mean that development for the purposes of dwellings on much of the Heritage Green site would place NCIA in a position where it could not comply with the existing consent conditions. If the existing acoustic limits are carried over then this situation would not change. If a new acoustic benchmark is to be set then a reduced level of acoustic amenity for residential areas in the vicinity of the tile plant is effectively endorsed.

The same concern is expressed in relation to sleep disturbance criteria. The existing consent requires that night time noise impacts at the nearest residences not exceed the $L_{A1(1\ minute)}$ noise level of 45dB(A) to protect against sleep disturbance. While the EA suggests that sleep disturbance criteria at the nearest residences in the existing Rutherford residential precinct and rural dwellings at Farley to the south is not exceeded under the expansion proposal, there is potential for sleep disturbance on the Heritage Green site where maximum noise levels could be as high as 53dB(A) – these areas would typically be within 70m to 90m of the NCIA boundary. Incorporation of a higher sleep disturbance benchmark into a development consent will lead to a potential reduction in the acoustic amenity of the nearby residential area.

The issue of acoustic impact again points to the potential land use conflict that exists where industrial and residential development are able to occur in close proximity. Council reinforces the need to set reasonable acoustic benchmarks for the development which are achievable in a practical sense given the technology currently available and also having regard to maintaining as close as possible the existing acoustic amenity of the lands both adjacent to and within the vicinity of the NCIA site that either are developed or are capable of being developed for residential purposes.

While the INP does not require acoustic impacts from railways to be taken into account, the proposed Maitland-to-Minimbah Third Rail proposal is nevertheless a very likely development outcome that will have potentially a significant impact on the acoustic amenity of the area. A discussion of the cumulative impacts of operational noise from the NCIA expanded plant and the railway activity should be addressed.

Section 94A Levy

Council has reviewed the applicant's comments in regards to the Section 94A levy and does not agree with the argument provided.

Although the proposed development may not have a significant effect or create additional demands on the provision of infrastructure in the LGA, the levying of Section 94A does not require a nexus between the levying of the payment and the expenditure of the works. This is clearly stated within Section 94A(4) of the *Environmental Planning and Assessment Act 1979*:

> *A condition imposed under this section is not invalid by reason only that there is no connection between the development the subject of the development consent and the object of expenditure of any money required to be paid by the condition.*

As such, Council requests that the Minister levy a Section 94A contribution as part of the consent in accordance with the Maitland Section 94A Levy Contributions Plan pursuant to Section 94A(1) of the Act. As previously stated, the levy is 1% of the total cost of the development and is required to be paid prior to the issue of a Construction Certificate.

Carparking

It is noted that the Carparking analysis within the EA indicates that there will be 32-33 factory staff servicing the eight manufacturing lines (once fully established) for each 12 hour shift, along with 10 office staff to work through the day, with shift change overs for factory workers occurring at 7:00am and 7:00pm. The EA states that office staff work throughout the day (i.e. 9am-5pm).

Given the shift change over occurs prior to the office staff commencing and after the office staff leave, it is considered that the proposed number of carparking spaces (70) can accommodate the carparking demand generated by the site and that a variation to the DCP chapter is considered to be justified. It is further advised that if the number of employees per shift rises, further carparking analysis should be undertaken to ensure that the number of spaces can match the increased number of employees.

Council also advises that the Maitland Citywide Development Control Plan: Chapter - Carparking contains enhanced requirements to the Australian Standards relating to carpark dimensions and aisle widths which should be complied with as part of the consent.

Farley Investigation Area

The land south of the subject site (as identified within Table 2) has been identified by the Maitland Urban Settlement Strategy and is currently undertaking investigations as part of a Planning Proposal to rezone the land from rural to residential. The site is also identified as a 'Proposed Urban Area' under the Lower Hunter Regional Strategy 2006.

If the maximum daytime noise threshold of 35dB(A) is maintained under a new consent then the proposed development appears to have some impact on the site, particularly in regards to noise as the 35dB(A) contour encroaches over the northern property boundary most noticeably under temperature inversion conditions and under north-west wind conditions. However, it is noted that the railway line provides potentially a greater noise source to the Farley Investigation Area and the rail noise and vibration issue is undergoing further investigation as part of the rezoning process. As previously mentioned the cumulative relationship between rail noise (existing and proposed) and operational noise from the expanded tile manufacturing plant has not been discussed in the EA.

Heritage Green

Council are currently in receipt of Development Application No. 08-2357 which proposes the development of approximately 440 lots for the purpose of accommodating dwellings and integrated outdoor private recreation spaces on the adjoining Heritage Green (HG) site to the east and south of the NCIA facility. This application is currently undetermined. It is considered that the expansion of the NCIA facility is likely to have a significant impact on the development of the Heritage Green site. While Clause 52 of the LEP requires the proponent for development on the HG site to address certain environmental criteria as a precursor to development of the land, there is potential for the development of dwelling houses and a range of other permissible uses under the existing 6(b) Private Recreation

zone and hence the criteria under Clause 52 would not be triggered. Notwithstanding this, environmental impacts would need to be properly canvassed under Section 79C of the Environmental planning and Assessment act 1979.

Although the existing DA 08-2357 is not strictly a matter for consideration under Section 79C of the EPA Act, 1979, the Minister should ensure that proper consideration is given to the relationship between the NCIA expansion and the type of development contemplated for the HG site under the provisions of Clause 52 of the LEP and the extent to which NCIA should be required to mitigate against the acoustic and air quality impacts of its development.

Conclusion

Council have endorsed a zoning strategy for the western side of the city which places residential zoned land in close proximity to industrial zoned land. The implications of this zoning pattern are that environmental impacts – particularly in relation to air quality, odour and acoustics and to a lesser extent traffic and visual impacts – become more prevalent as industry expands and Council must ensure that these land use conflicts are properly managed in order to both foster a productive industrial sector by acknowledging its contribution to the economy of the city and to balance this against the principle of maintaining an appropriate level of residential amenity.

The above comments relate to issues that Council considers of high importance in the Department's assessment of the development application. In the event that the Minister chooses to determine the development application by way of approval, Council would welcome consultation on the preparation of consent conditions.

If you have any further questions or enquiries, please contact either myself or the Council's Principal Planner Stephen Punch on 02 4934 9700.

Yours faithfully

DAVID EVANS
GENERAL MANAGER

NSW GOVERNMENT **Office of Water**

Major Development Assessments
Department of Planning
GPO Box 39
SYDNEY NSW 2001

Contact: Jodie Dabovic
Phone: 02 4904 2571
Fax: 02 4904 2501
Email: Jodie.Dabovic@water.nsw.gov.au

29 July 2010

Our ref: MPER20474
Your ref: S08/01676

Attention: Chris Richie

Subject: National Ceramics Industries Australia, Expansion of Existing Tile Manufacturing Facility (09_0006)

The NSW Office of Water (NOW) has reviewed the environmental assessment for the expansion of the existing tile manufacturing facility for national Ceramics Industries Australia.

The EA has provided assessment on potential impacts and mitigation for water quality, stormwater retention and sediment control during construction and operation of the tile manufacturing facility. The assessment has also identified that potable water has been secured from Hunter Water and the captured stormwater will also be utilised by the manufacturing facility for all operations on site.

NOW has no objection to the proposal.

If you require further information please contact Jodie Dabovic on 4904 2571 at the Newcastle office.

Yours sincerely

Mark Mignanelli
Manager
Major Projects and Assessment
NSW Office of Water
Newcastle

307DA62;1
10/1235
AT

PCU013440

RTA

Manager - Industry
Department of Planning
Major Development Assessment
GPO Box 39
SYDNEY NSW 2001

Attention: Ms Christine Chapman

EXHIBITION OF ENVIRONMENTAL ASSESSMENT – PROPOSED EXPANSION OF CERAMIC TILE MANUFACTURING FACILITY (MP09_0006), RACECOURSE ROAD, RUTHERFORD

Dear Ms Chapman

I refer to your letter dated 12 July 2010 (Your reference: S08/01676), which was received on 13 July 2010, regarding the exhibition of Environmental Assessment and requesting the Roads and Traffic Authority (RTA) to make a detailed submission on the project.

The RTA's primary interests are in the road network, traffic and broader transport issues, particularly in relation to the efficiency and safety of the classified road network, the security of property assets and the integration of land use and transport.

In accordance with *the Roads Act 1993*, the RTA has powers in relation to road works, traffic control facilities, connections to roads and other works on the classified road network. As the New England Highway (HW9) is a classified (State) road, RTA concurrence is required for connections to the road with Council consent, under section 138 of the Act. Council is the roads authority for the New England Highway and all other public roads in the area.

In accordance with the *State Environmental Planning Policy (Infrastructure)* this development application meets the requirements under *Clause 104* and *Schedule 3 Column 2* for referral to the Hunter Regional Development Committee (HRDC). However, as the Chairperson and delegate for the HRDC, I have reviewed the information provided and consider that the traffic generated by the proposed development will not have a significant impact on traffic efficiency or road safety of the classified (State) road network.

The HRDC and the RTA would therefore have no objections to or requirements for the proposed expansion of the existing on-site ceramic tile manufacturing facility.

Roads and Traffic Authority ABN 64 480 155 255

59 Darby Street Newcastle NSW 2300
Locked Bag 30 Newcastle NSW 2300 DX 7813
www.rta.nsw.gov.au | 13 [illegible]

Please contact me on 4924 0240, if you require further advice.

Yours sincerely

Dave Young
Manager, Land Use Development
Hunter Operations & Engineering Services

9 August 2010

Cc: Mr Scott Henderson
Maitland City Council

NSW GOVERNMENT | Planning

Contact: Christine Chapman
Phone: 02 9228 6537
Fax: 02 9228 6466
Email: christine.chapman@planning.nsw.gov.au

Our ref: 1008226 P2

Mr Leonardo Pereira
Managing Director
National Ceramics Industries Australia
PO BOX 765
MAITLAND NSW 2320

Dear Mr Pereira,

National Ceramic Industries Australia, Expansion of Existing Tile Manufacturing Facility (09_0006)
Response to Submissions

I have attached copies of the submissions that the Department received during the exhibition period for the above referenced project.

The Department of Environment, Climate Change and Water (DECCW) has not yet provided a submission on the project. This will be forwarded to you after it has been received.

The Department may also request further information from you as the assessment of the project progresses.

In accordance with Section 75H (6) of the *Environmental Planning and Assessment Act*, the Director-General requires you to provide a Submission Report, which is your response to all the issues raised in:

- the submissions attached, and
- the submission subsequently forwarded to you from DECCW as mentioned above.

Should you wish to clarify any of the issues raised in the submissions, please do not hesitate to call me on (02) 9228 6537 or email me at christine.chapman@planning.nsw.gov.au.

Yours sincerely

Christine Chapman 19.8.2010
Senior Planner
Major Development Assessment

CC: James McIntyre, AECOM

R.H.KERRIGAN
AGRICULTURAL CONSULTANT
709 New England Highway
LOCHINVAR N.S.W. 2321

TEL 61-4930-7286 - e-mail:- ruralplus@netcentral.com.au

R.H. KERRIGAN B.Sc.Agr. M.A.I.A.S. M.A.I.A.T. C.P.Ag.

18 AUGUST 2010

Major Projects
PLANNING NSW
BOX 39
G.P.O.
SYDNEY
N.S.W. 2001

Attention Christine Chapman

Re NATIONAL CERAMIC INDUSTRIES. – Expansion at Rutherford.

Dear Christine

Thank you for the extension of time that you kindly allowed me in relation to the above matter.

My six pages of comments are enclosed plus a C.V. which details my involvement in relation to the effects of industrial pollution on rural production.

Yours Faithfully

ROBERT KERRIGAN

R.H.KERRIGAN
AGRICULTURAL CONSULTANT
709 New England Highway
LOCHINVAR N.S.W. 2321

TEL 61-4930-7286 - e-mail:- ruralplus@netcentral.com.au

R.H. KERRIGAN B.Sc.Agr. M.A.I.A.S. M.A.I.A.T. C.P.Ag.

18 AUGUST 2010

Major Projects
PLANNING NSW
BOX 39
G.P.O.
SYDNEY
N.S.W. 2001

Attention Christine Chapman

Re NATIONAL CERAMIC INDUSTRIES. – Expansion at Rutherford.

I wish to pass comment re the above document MP 09-006-Proposed Expansion of Ceramic Tile Manufacturing Facility (National Ceramic Industries Australia-NCIA), 175 Racecourse Road, Rutherford, N.S.W.

My comments are restricted to the matter of flourine output from the existing facility and its effect on vegetative growth within the area affected by gaseous emissions output from that facility.

We live at 709 New England Highway Lochinvar and have been resident on this rural property since 1970, some 40 years occupancy.

In 1970, we planted an ornamental grape vine, directly at the back of our house for two reasons. Firstly for protection from the summer sun by the vegetative growth and secondly as a diagnostic tool, being a biological indicator of possible excess fluoride emissions from the aluminium smelter at Kurri Kurri, located some 11 kilometres due south of our property. At that time there was considerable concern in the district as to fluoride output from that smelter. My previous experience, and on advice from others, had shown that grape vines were a very good indicator plant of excess fluoride being present in the atmosphere.

In the initial period from 1970 to 1980, the grape vine did, in fact, show reduced and abnormal growth from excess flouride concentrations at various times during that 10 year period. The aluminium smelter at Kurri improved their flouride emissions control in the early 1980's and we would appear to have had no obvious flouride damage to the grape vine since the early 1980s, until the recent detrimental signs of excessive flouride concentration which has coincided with the development of the tile manufacturing company at Rutherford.

My previous experience in fluoride damage to horticultural crops commenced in 1967, when I became involved as an expert witness in what was to become a significant legal matter where three stone fruit orchards had their physical production and hence income dramatically reduced from fluorine output from a nearby industrial complex. This matter continued until 1983, or for 16 years, the length of time that it took the stone fruit trees to recover completely from the excess fluoride in the atmosphere originating from the industrial complex.

As a result of this matter, I then became involved with assessment of fluoride damage in horticultural crops in many parts of Australia, using visual vegetative signs of excessive fluoride as the prime diagnostic tool, naturally followed by the relevant chemical analysis of horticultural species and adjacent vegetation species.

Complete details of my experience etc, is provided for you in the attached Curriculum Vitae.

The grape vine planted at 709 New England Highway at Lochinvar has shown evidence of mild fluoride affectation in the growing seasons of 2007/2008, 2008/2009, 2009/2010.

This grape vine is located approximately 4.8 kilometres from the tile manufacturing plant in a westerly direction and approximately 500 metres due west of existing Air Quality Receptor 12

As our practical experience, over some 43 years, has shown fluoride to accumulate, over time, measured in years, in perennial plants, and as grape vines are perennials, it is obvious from past experience that, existing flouride reduction/ control processes in operation at the National Ceramic Industries Rutherford plant are not adequate enough to reduce actual fluoride concentration in emissions to the atmosphere to levels which do not affect perennial horticultural plants at a distance of 4.8 kilometres in a westerly direction from the processing facility

Of all the emissions predicted to come from the eight production lines, Hydrogen fluoride emissions are ranked highest on TABLE 3 – PRIORITISATION OF ENVIRONMENTAL ISSUES. They have a severity ranking of 2, a consequence ranking of 3 and a Priority of 5, being ranked High and at the top of the table. Hydrogen Flouride Emissions are the only Environmental Issue that is ranked HIGH with a Priority of HIGH. I agree with this ranking as my practical experience, over many years, has shown fluoride to be a very insidious, "silent and non smelling" pollutant which has already caused significant damage to vegetation by the time that the initial physical symptoms of affected plants are noticed by experienced observers.

We have no idea of what any measureable levels of flourine may have been in the past six or so years simply because there is no Air Quality Receptor data available for our location. Taking data from elsewhere and relating that date to our property will only produce "useless results" due to our many years of observations of physical atmospheric pollution results from stratified air flows across the flat area to the east of our property and west of the National Ceramics site.

The existence of air quality receptors and or any emission measuring program, operating from the start of production in Stage 1 of this facility was never made known to the general public. Secondly had those responsible for the location of the air quality receptors made inquiries of local residents, the writer and other residents could have provided them with information collected over 40 years of the effects of atmospheric pollution upon plants, both annual and perennial, as well as significant deterioration of gutters and fencing wire. We could have also indicated areas where air quality receptors have been installed, the actual results of which could have been predicted from experience, and are now a waste of time and resources.

Our property at 709 New England Highway Lochinvar has been subject to atmospheric industrial pollution for many years, initially from the high sulphur coal being used to fuel the boiler house at National Textiles and its predecessors as well as the other atmospheric emitters that exist in the Rutherford Industrial estate and operated prior to the commencement of production at National Ceramic Industries.

The report available on the PLANNING NSW WEB site states in:- TABLE 5 – SUMMARY OF COMPLIANCE EMISSION ASSESSMENT RESULTS - that Flourides emitted from the existing two operating production lines were only measured at the stacks servicing the drying kilns. There is no data presented which provides actual Flouride Readings at Air Quality Receptor Sites and or Emission Discharge Points

TABLE 6 – DISCHARGE CONCENTRATION MONITORING REQUIREMENTS details the emissions discharge points ,both within the property boundary and external to the property boundary. The pollutants to be measured for each discharge point are detailed and can be summarised as follows:-

For Discharge Points, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 18, 19, 20, 21, Pollutants able to be measured are:-

Velocity
Volumetric Flow Rate
Temperature
Moisture content in stack gases
Dry gas density
Molecular Weight of stack gases
Solid particles.

For Discharge Points 14, 15, 16, 17, Pollutants able to be measured are:-

H2SO4
Any fluorine compound (HF)
NO2 or NO or both
Hazardous substances (12 listed)
Cadmium
Mercury
Solid Particles
Velocity
Volumetric Flow Rate
Temperature
Moisture content in stack gases
Dry gas density
Molecular Weight of stack gases
CO2
O2

This information reveals that actual output of any Flouride compound can only be measured at four discharge points, being from the factory itself. This information clearly indicates that there is not available any information in relation to the actual measurement at any time of fluoride containing compounds at any of the air quality receptor measuring sites NOs 1-13 and 18-21 inclusive.

TABLE 10 – PROJECT MAXIMUM PREDICTED AIR EMISSIONS-GLCs for PM10, TSP and HF(ug/m3) provides Maximum Predicted Air Emissions for 8 production lines, or full production, for the three nominated pollutant sources with TOTAL FLOURIDE being represent as HF, as projected to be measured by the Sensitive Receptors being Boundary Receptors nos 1, 2 and 3, Existing Residential Receptors 4 to 19 inclusive and Potential Residential Receptors 20-22 inclusive.

There is no base data for these various sensitive receptors being number1 to13 inclusive and 18 to 21 inclusive, at any stage during the period of operation to one of two production lines.

There is also no explanation of how the predicted air emission were calculated in TABLE 10 so in the absence of that basic data, and method of calculation, it must be assumed that the MAXIMUM PREDICTED AIR EMISSIONS are a "guessetimate" of some kind and therefore should not be considered in any way in the evaluation of this report as the projected figures do not have any explained factual basis.

My experience, over 43 years, has led me to be able to prove that the current flouride levels in emissions, allowed by the state authorities and required to be produced from industrial activities in NSW is, in many instances, simply too high to provide flouride levels in the atmosphere which will not adversely affect vegetative growth. This particularly is the case where weather conditions can be subject to rapid change and where "atmospheric layers" of polluted air can exist, as in the area of 709 New England Highway Lochinvar.

I have always found that plants can tell if flouride is in excess in the atmosphere, often well before the receptor or machine readings provide the slightest indication of such a situation.

It would appear that only two out of four production lines for ceramic tile manufacture have been used to date. With another two production lines to come "on stream" in buildings already approved and plus approval for the construction of another four production lines being sought in Document MP 09-006-Proposed Expansion of Ceramic Tile Manufacturing Facility (National Ceramic Industries Australia-NCIA), 175 Racecourse Road, Rutherford, N.S.W., it has to be obvious that the total flourine output will be 400% higher than current brief records show.

At this vastly increased level of flourine output from a production complex with eight production lines, there could well be flouride affectation of growing plants for not 400 metres from the plant location as is suggested but up to 1600 metres from that same site.

From experience, flourine does not stay in the atmosphere as hydrogen flouride but becomes stored in the vegetative material and, as detailed above, dependent on atmospheric fluoride concentration and stage of growth of the plant material, can affect plant growth for many years as well as animal growth and health of any animal species grazing pasture with flouride contamination in the plant tissue. We already have experience where it took 16 years, after fluoride contamination, for stone fruit trees affected by fluoride to get to a fluoride free status.

This whole document, namely Document MP 09-006-Proposed Expansion of Ceramic Tile Manufacturing Facility (National Ceramic Industries Australia-NCIA), 175 Racecourse Road, Rutherford, would appear to be a partial justification of previous emissions output and measurement practice for two production lines only and has simply transferred that emissions data, being generated from two production lines, to be exactly the same amount of emissions data as would be produced from eight (8) production lines. There appears to be no attempt to amplify the emissions material as presented on the Planning web site from an output for two production lines to a four fold increase of being emissions from eight production lines

There are three possible future scenarios for atmospheric emission control, neither of which is clearly spelt out in the submission. Unfortunately the submission consists of considerable amounts of duplicated material, the majority of which is irrelevant, having been already been mentioned in other parts of the report and as such makes the actual interpretation of the report much more difficult and confusing than it really should be.

The first scenario is when the Company expects the proposed two additional production lines in Stage 1 for which approval has been granted, but at this time not operational to produce nil (0) atmospheric emissions and for the additional four proposed production lines for which approval is being sought at this time to also produce nil (0) atmospheric emissions.

I personally doubt that atmospheric pollution levels could be reduced to zero but if that is technically possible, then there is no reason why the atmospheric pollution levels from the current two operational production lines could not be reduced to zero.

The second scenario would be that the emissions control for production lines 3 and 4 in Stage 1 and Production lines 5, 6, 7, and 8 in Stage 2 would produce the same quantity of atmospheric emissions per production line as detailed in the Report.

This would then mean a four fold total increase in atmospheric emissions when the eight (8) production lines were in operation.

Two further possibilities exist in this scenario.

The second possibility is a scenario where the atmospheric emissions from eight (8) production lines area equal to eight times those currently being produced from two operational production lines and that quantity of emissions only affecting that area which is currently affected being approximately 4 kilometres from the plant location. That is 8 times the pollutant concentration falling on an area roughly 4 kilometres in diameter from the plant location.

The third possibility would be that the atmospheric emissions from eight (8) production lines would affect an area 4 times that which is currently affected, that being all that area within a circle with a 1.6 kilometre radius from the plant location. This possibility assumes a pollutant concentration of the same level as currently exists from the two operational potlines.

There is nothing in the material analysed which can provided any sort of responsible answer to the above scenarios.

Further, the current submission does not produce any data that shows the effect of flouride on amenity plantings such as would normally occur in existing and or future residential areas.

With existing residential areas, being some 550 to 600 metres from the existing plant boundary and with the possibility of the Heritage Green residential development that there will be considerably more residences existing much closer than 500 metres to the plant boundary. There is therefore a strong possibility than the occupants of such residences will be unable to maintain attractive amenity horticultural plantings due to the high ambient fluoride levels.

If such is correct and there is no reason why the statement should be otherwise, current landholders whose existing houses are within 1.6 kilometres of the plant should be advised of the likely affect of pollutants on amenity horticultural plantings and that operation of vegetable gardens within that area, that is likely to be contaminated especially by flourine should be permanently prohibited. For future residential developments that may occur within 1.6 kilometres of the plant site, the landholders should be advised by real estate agents selling such lots that no amenity horticultural plantings of any description including vegetable gardens should ever by carried out on such residential blocks while ever the ceramic tile manufacturing plant is in operation.

There is also the very important point that this ceramic tile production facility shares a common western boundary (as in the case of NCI) and a common eastern boundary (in the case of Jurox). Jurox is a reasonably large manufacturer of veterinary chemicals of all kinds and I feel that they should be concerned about the possibility of any type of emission contamination from NCI of their veterinary chemical production. It is also not unusual in the human and veterinary chemical production facilities that medicines etc. for human uses are also manufactured in veterinary chemical plants, with specific production facilities.

Those people assessing this report should recognise this very important point as there exits the possibility of some one or some animal being dramatically affected by chemical products which have been contaminated by emissions coming from NIC.

CONCLUSION

The material presented on PLANNING NSW web site in relation to this matter is more a summary of the results of the previous four or five years pollution control measures and other similar matters of a ceramic production facility operating with two production lines for which previous approval has been obtained. There is repeated repetition of the same or similar material throughout reports on the web site which makes it very difficult to ascertain where and in what section is the material submitted which indicates the total expected emissions from an increased physical operational stage of 8 production lines, or four times the size of the existing operation of two production lines.

In addition, there is no consideration of the effects of vastly increased atmospheric emissions production on amenity horticultural activities and or home vegetable garden activities where fluorine levels could be increased to levels in home grown vegetables that can affect human health or on the safety of veterinary and human chemical products that may be manufactured in a neighbouring existing production facility.

Thank you for your consideration and please advice if you seek clarification or expansion on any part of this submission.

YOURS FAITHFULLY

ROBERT KERRIGAN

R.H.KERRIGAN & ASSOCIATES
Agricultural & Equine Consultants
MAROOAN
LOCHINVAR. N.S.W. 2321
Telephone 049-307286 Fax 049-342655

CURRICULUM VITAE – AUGUST 2010

ROBERT HARRY KERRIGAN

MARRIED, 3 adult daughters.

ACADEMIC QUALIFICATIONS B.Sc.Agr. (Sydney University) 1959

Major in Animal Husbandry – Nutrition.

Animal subjects studied included Veterinary Anatomy and Veterinary Physiology, same as Vet. Science students plus 3 years Biochemistry. Vet Students did 1 year Biochemistry.

PROFESSIONAL ASSOCIATIONS

M.A.I.A.S. (Australian Institute of Agricultural Science) (1958-to date)

Leading Professional (Stage 3) A.I.A.S.T.

M.A.A.A.C. (Australian Association of Agricultural Consultants).(1963-1992)

C.P.Ag (Certified Practicising Agr) 1988 to date

PROFESSIONAL & EMPLOYMENT ACTIVITIES

1959-1960 Livestock Research Officer N.S.W. AGRICULTURE.

1961-1962 Livestock Buyer Tancred & Company Queensland

1963-1965 Technical Officer Wellcome Australia Ltd.

1966-1967 Agricultural Consultant McGowan & Associates, Narrandera & Albury N.S.W.

1967 to date Self employed Agricultural Consultant – Hunter Valley N.S.W.

1972-1980 – Consultant JOHN P. YOUNG and ASSOCIATES –
MANAGEMENT CONSULTANTS-Newcastle

PRINCIPAL CONSULTING ACTIVITIES

The provision of independent professional advice on matters relating to agriculture, especially with reference to, :-

Technical matters relating to all forms of rural production in the Hunter Valley and adjacent areas of N.S.W.

Specialised agronomic and nutritional advice to the equine industry Australia wide.

Specialised services relating to agricultural litigation, planning and various legal problems relating to the rural and equine industry as well as specialised financial advice, including mediation, to rural, equine and non rural businesses, insurance companies and financial institutions, Australia wide.

Australian Bankers Association/National Farmers Federation ACCREDITED AGRICULTURAL CONSULTANT/MEDIATOR since 1988.

Australian Veterinary Chemicals Association ACCREDITATION NUMBER 5497.

DETAILS OF MAJOR PROJECT INVOLVEMENT

1. MULTI - VINEYARD STUDIES

Supervised numerous technical/financial studies on vineyard and or winery development over the past 29 years, in both the Hunter Valley of N.S.W. and other parts of Australia.

VINEYARD DISTRICT TOURISM STUDY - Cessnock City Council responsible for all the agricultural and viticultural content.

PHYSICAL AND FINANCIAL ASSESSMENT OF EFFECT OF INDUSTRIAL FLOURIDE EMISSIONS ON HORTICULTURAL PRODUCTION

2 MULTI-DISCIPLINARY STUDIES

Involved as a team member, responsible for agricultural and economic sections of studies relating to :-

ENVIRONMENTAL IMPACT STATEMENTS - OPEN CUT COAL MINES

AGRICULTURAL REHABILITATION STUDIES - OPEN CUT COAL MINES & SEWERAGE DISPOSAL

ECONOMIC EFFECT OF COAL MINES ON AGRICULTURAL PRODUCTION

EFFLUENT DISPOSAL STUDIES.

FLOOD MITIGATION STUDIES.

RURAL SOCIAL SURVEYS.

LOCAL GOVERNMENT ENVIRONMENTAL PLANS.

LAND RESUMPTION VALUATIONS AND ASSOCIATED MATTERS.

AGRICULTURAL MATTERS re GLENNIES CREEK DAM

VARIOUS MATTERS FOR R.T.A. OF NSW involving land use and highway conflicts.

As an ABA/NFF mediator I have been involved in numerous financial assessments of both rural and non rural businesses over the past 20 years and was doing that type of work for many years before that accreditation came into effect.

Due to confidentiality aspects, it is not possible for me to name the clients or the industries involved in these matters.

CONTINUED NEXT PAGE

3. FINANCIAL & LEGAL APPRAISALS , MEDIATIONS & OTHER SIMILAR ACTIVITIES.

As an expert witness, working with other professionals of various disciplines, involvement in numerous matters, now over 900, over the past 40 years, involving assessment of financial loss, economic viability and similar economic, social and financial matters relating to rural and equine activities.

Professional interests have covered the three eastern States of Australia. Due to confidentiality aspects, it is not possible for me to name the clients, the industries, and physical location or the individual subjects of these matters.

* at end of each topic indicates more than one matter.

Topics and areas of interest have included:-

Physical and financial development of vineyards, - Hunter Valley, Orange and Griffith N.S.W.*
Day to day vineyard management – Hunter Valley, Mudgee N.S.W.*
Weedicide damage to grape vines.*
Use of polluted water for irrigation.*
Poor quality plastic in strawberry production
Effect of gaseous industrial emissions on stone fruit production.*
Incorrect installation of irrigation equipment. *
Reduction in farm income due to personal accidents.*
Erosion from roadworks affecting farm income.*
Supply of incorrect vegetable seed varieties.
Bushfire damage. *
Boundary fencing disputes *
Various disputes re share-farming & property leasing agreements.*
Compensation cases, especially Mining Wardens court.*
Water licence applications.*
Effect of coal mine pollutants on physical livestock and pasture production.*
Financial loss in agriculture due to coal mining activities *
Reduction in milk income due to supply of contaminated feed.*
Rural rating applications. *
Supply of seed contaminated with noxious weeds.
Planning and subdivisional matters relating to agriculture and land zoning. *
Loss of income from destruction of stud beef herd due to introduced disease.*
Loss of income as a result of personal injury. *
Effect on rural income as a result of financial embezzlement.
Effect of road resumption and construction on primary production *
Numerous matters relating to the horse industry, involving management, insurance and financial considerations *

OTHER ACTIVITIES AND INTERESTS

1. PART TIME TEACHER N.S.W. TAFE 1975-1989 Equine and Rural Subjects.

2. Educational Course Designer – Equine and Rural Courses – NSW TAFE, NZ POLYTECHNICS, and U.K. Agricultural Colleges.

3. Author – PRACTICAL HORSE NUTRITION, HORSE FEEDING SIMPLIFIED, EQUINE ILLUSTRATED ENCYCLOPAEDIA, HORSE BREEDING videos Parts 1, 2 3 and 4, HORSES, THE BUYERS GUIDE, NATURAL HEALTHY HORSE CARE,

4. Co Author – PRACTICAL HORSE BREEDING, FARMING FACTS, FINANCES & FAILURES, PRACTICAL HORSE SENSE AND SAFETY, MUM'S AND DADS HORSE BOOK, HORSES, BASICS FOR BEGINNERS.

5. Publisher and Wholesaler – THE MARCH OF THE WALLABIES, THE KANGAROO KIDS, GYMNASTIC EXERCISES FOR HORSES, TIPPY TEACHES EMMA TO RIDE, FOALING MARE AND FOAL MANAGEMENT, DRESSAGE ILLUSTRATED, DRESSAGE TERMS DEFINED, SHOWJUMPING TERMS DEFINED, THE HORSE THAT CALLS AUSTRALIA HOME, DRESSAGE ARENAS THE RIDERS GUIDE, PRACTICAL HORSE NUTRITION, HORSE FEEDING SIMPLIFIED, EQUINE ILLUSTRATED ENCYCLOPAEDIA, HORSE BREEDING videos Parts 1, 2 3 and 4, HORSES, THE BUYERS GUIDE, NATURAL HEALTHY HORSE CARE, PRACTICAL HORSE BREEDING, FARMING FACTS, FINANCES & FAILURES, PRACTICAL HORSE SENSE AND SAFETY, MUM'S AND DADS HORSE BOOK, HORSES, BASICS FOR BEGINNERS.

6. Owner EQUINE EDUCATIONAL 1967-2007- publisher, importer, exporter and wholesaler of horse related books to the saddlery and book trade – catalogue of over 1300 titles.

7. Owner TUXEDO BOOKSHOP 1996-2008 – mail order retail horse and rural books, videos and computer programmes, etc. Catalogue of 1900 products making TUXEDO the largest web site in the world servicing these subjects. Refer www.tuxedo.com.au

8. DIRECTOR – NSW HORSE COUNCIL 1991 – 1996

9. Contributor monthly articles relating to the horse industry to HOOFS AND HORNS, HORSE AUSTRALIA, THE BLOODHORSE REVIEW all in Australia and PACEMAKER in the U.K.

10. STEWARD – ROYAL EASTER SHOW 1959-1997 (38 years)

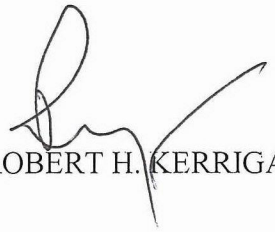
11. Judge – RAS OF NSW – FARM SOFTWARE COMPETITION

12. Primary Producer – 1966-1989 – beef cattle lucerne growing and haymaking and dairy farming. Physical injury in 1987 led to cessation of these activities.

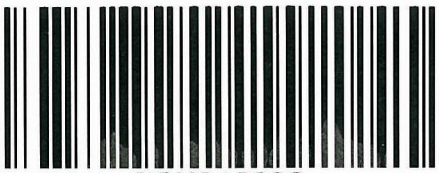
13. Specialist timber wholesaler – Australian native species.

14. Horse owner, exhibitor and competitor from 1959 to 1986 in rodeo, campdrafting, eventing, dressage and stock horse events.

Additional details and further clarification can be provided if required.



ROBERT H. KERRIGAN



30 July 2010

Major Development Assessment

Department of Planning

GPO Box 39 Sydney NSW 2011

Dear Ms Chapman,

RE: Part 3A – Application Number MP09_0006

I, Renee Daniel (name) of 37 Regiment rd Rutherford (address) oppose the application to expand National Ceramic Industries Australia's tile factory if the approval will allow the tile factory to emit more pollution into our environment.

I am extremely concerned with the amount of odour, noise, fluoride and air pollution in the Rutherford area and oppose the government allowing more pollution to enter our environment.

I also call on government to monitor pollution on a regular basis and to prosecute the companies that are polluting our environment.

_____ (signature)

30 July 2010

Major Development Assessment

Department of Planning

GPO Box 39 Sydney NSW 2011

Dear Ms Chapman,

RE: Part 3A – Application Number MP09_0006

I, Cris Higgins (name) of 270 Wallambi Rd Farley (address) oppose the application to expand National Ceramic Industries Australia's tile factory if the approval will allow the tile factory to emit more pollution into our environment.

I am extremely concerned with the amount of odour, noise, fluoride and air pollution in the Rutherford area and oppose the government allowing more pollution to enter our environment.

I also call on government to monitor pollution on a regular basis and to prosecute the companies that are polluting our environment.

_____ (signature)

30 July 2010

Major Development Assessment

Department of Planning

GPO Box 39 Sydney NSW 2011

Dear Ms Chapman,

RE: Part 3A – Application Number MP09_0006

I, Ben massie (name) of 2 Liddell Av Rutherford (address) oppose the application to expand National Ceramic Industries Australia's tile factory if the approval will allow the tile factory to emit more pollution into our environment.

I am extremely concerned with the amount of odour, noise, fluoride and air pollution in the Rutherford area and oppose the government allowing more pollution to enter our environment.

I also call on government to monitor pollution on a regular basis and to prosecute the companies that are polluting our environment.

B. massie (signature)

30 July 2010

Major Development Assessment

Department of Planning

GPO Box 39 Sydney NSW 2011

Dear Ms Chapman,

RE: Part 3A – Application Number MP09_0006

I, Mark Mungovan (name) of 17 Lisa Place Rutherford 2320 (address) oppose the application to expand National Ceramic Industries Australia's tile factory if the approval will allow the tile factory to emit more pollution into our environment.

I am extremely concerned with the amount of odour, noise, fluoride and air pollution in the Rutherford area and oppose the government allowing more pollution to enter our environment.

I also call on government to monitor pollution on a regular basis and to prosecute the companies that are polluting our environment.

(signature)

30 July 2010

Major Development Assessment

Department of Planning

GPO Box 39 Sydney NSW 2011

Dear Ms Chapman,

RE: Part 3A – Application Number MP09_0006

I, Robert McCahon (name) of 6/18 Justine Parade Rutherford (address) oppose the application to expand National Ceramic Industries Australia's tile factory if the approval will allow the tile factory to emit more pollution into our environment.

I am extremely concerned with the amount of odour, noise, fluoride and air pollution in the Rutherford area and oppose the government allowing more pollution to enter our environment.

I also call on government to monitor pollution on a regular basis and to prosecute the companies that are polluting our environment.

R McCahon (signature)

30 July 2010

Major Development Assessment

Department of Planning

GPO Box 39 Sydney NSW 2011

Dear Ms Chapman,

RE: Part 3A – Application Number MP09_0006

I, Katie Writer (name) of 7 Brigatine St Rutherford NSW 2320 (address) oppose the application to expand National Ceramic Industries Australia's tile factory if the approval will allow the tile factory to emit more pollution into our environment.

I am extremely concerned with the amount of odour, noise, fluoride and air pollution in the Rutherford area and oppose the government allowing more pollution to enter our environment.

I also call on government to monitor pollution on a regular basis and to prosecute the companies that are polluting our environment.

_____ (signature)

30 July 2010

Major Development Assessment

Department of Planning

GPO Box 39 Sydney NSW 2011

Dear Ms Chapman,

RE: Part 3A – Application Number MP09_0006

I, ABELARDO GOMEZ (name) of 30 BENJAMIN CIRCUIT RUTHERFORD, NSW (address) oppose the application to expand National Ceramic Industries Australia's tile factory if the approval will allow the tile factory to emit more pollution into our environment.

I am extremely concerned with the amount of odour, noise, fluoride and air pollution in the Rutherford area and oppose the government allowing more pollution to enter our environment.

I also call on government to monitor pollution on a regular basis and to prosecute the companies that are polluting our environment.

_____ (signature)

30 July 2010

Major Development Assessment

Department of Planning

GPO Box 39 Sydney NSW 2011

Dear Ms Chapman,

RE: Part 3A – Application Number MP09_0006

I, MICHELLE GILLARD (name) of 8 CORVETTE CL, RUTHERFORD (address) oppose the application to expand National Ceramic Industries Australia's tile factory if the approval will allow the tile factory to emit more pollution into our environment.

I am extremely concerned with the amount of odour, noise, fluoride and air pollution in the Rutherford area and oppose the government allowing more pollution to enter our environment.

I also call on government to monitor pollution on a regular basis and to prosecute the companies that are polluting our environment.

(signature)

30 July 2010

Major Development Assessment

Department of Planning

GPO Box 39 Sydney NSW 2011

Dear Ms Chapman,

RE: Part 3A – Application Number MP09_0006

I, Rachael Gray (name) of 10 Aaron Cove, Rutherford (address) oppose the application to expand National Ceramic Industries Australia's tile factory if the approval will allow the tile factory to emit more pollution into our environment.

I am extremely concerned with the amount of odour, noise, fluoride and air pollution in the Rutherford area and oppose the government allowing more pollution to enter our environment.

I also call on government to monitor pollution on a regular basis and to prosecute the companies that are polluting our environment.

(signature)

30 July 2010

Major Development Assessment

Department of Planning

GPO Box 39 Sydney NSW 2011

Dear Ms Chapman,

RE: Part 3A – Application Number MP09_0006

RACHEL SHRUB

I, Michael Shrubb (name) of 3/8 Justine PDE Rutherford (address) oppose the application to expand National Ceramic Industries Australia's tile factory if the approval will allow the tile factory to emit more pollution into our environment.

I am extremely concerned with the amount of odour, noise, fluoride and air pollution in the Rutherford area and oppose the government allowing more pollution to enter our environment.

I also call on government to monitor pollution on a regular basis and to prosecute the companies that are polluting our environment.

M. Shrubb (signature)

30 July 2010

Major Development Assessment

Department of Planning

GPO Box 39 Sydney NSW 2011

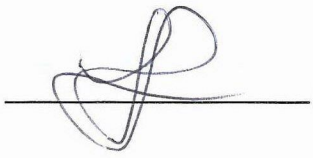
Dear Ms Chapman,

RE: Part 3A – Application Number MP09_0006

I, LORAINE WEES (name) of 59 CLAYTON CR RUTHERFORD (address) oppose the application to expand National Ceramic Industries Australia's tile factory if the approval will allow the tile factory to emit more pollution into our environment.

I am extremely concerned with the amount of odour, noise, fluoride and air pollution in the Rutherford area and oppose the government allowing more pollution to enter our environment.

I also call on government to monitor pollution on a regular basis and to prosecute the companies that are polluting our environment.



(signature)

"This page has been left blank intentionally"

Appendix B

Sacmi Oxygen Concentration Correspondence

"This page has been left blank intentionally"

SACMI FORNI
SACMI AUTOMATION

SACMI FORNI S.p.A. Unipersonale
Via dell'Artigianato, 10
42013 Salvaterra di Casalgrande (Re) Italy
Tel.+39 0522.997011 Fax +39 0522.840875
sacmi_forni@sacmi.it - www.sacmiforni.it
sacmi_automation@sacmi.it - www.sacmiautomation.it

Sede Legale: Via Marconi, 3 - Bologna
Cap.Soc. Euro 14.100.000,00 i.v
C.F. e Part. IVA 02471 770376 - Cod. IVA CEE: IT02471 770376
Longitudine est 10° 45' 30" - Latitudine nord 44° 34' 53"
R.E.A. Bologna n. 293370 Export BO 018854 Reg. Imp. Bo n. 40829
Società appartenente al Gruppo Sacmi Imola S.C.

a company of SACMI

TO: AECOM - James McIntyre
St Patricks Commercial Centre Queen Street,
Singleton, NSW 2330
PO Box 3148 Singleton NSW 2330

Salvaterra, October 18 2010

Dear Mr. McIntyre,

In reply to your question about the oxygen percentage detected to the exhausts chimney of a roller kiln for ceramic production we confirm that under normal and efficient kiln operation the kiln exhaust gasses will have an Oxygen content ranging between 15-18%.
We would like to remind and detail some points:

1. All these type of kilns are supplied with burners working on fixed air range and generally adjusted to work on air excess.
2. The position of the exhausts chimney respect to the entry port of the kiln makes all the pre kiln and preheating zone to be working in negative pressure in order to exploit to the utmost the heat exchanged by fumes convection with the upcoming material.
   In fact, the fumes suctioned from the firing zone are moving counter current respect the material's direction.
3. Being the pre kiln and preheating zones in negative pressure conditions, a certain quantity of air is passing through the roller bricks adding more air to the exhausts' chimney.
4. Dilution air to keep the exhausts temperature to the fan in a safety range.

One of the reason behind the volumes of air suctioned, besides the convective heat exchanged, is the kiln stability in specific production cases (i.e. gaps).

Attached you can also find :

5. The official document released by the European Community "Integrated Pollution Prevention Control – Reference Document on Best Available Techniques in the Ceramic Manufacturing Industry" where the standard conditions for measurements of volume flows and concentrations are clearly stated (see chapter 3 page 93).
6. Some examples of drier and kiln measurement to the exhausts chimney.
7. A pic representing air volumes to the exhausts chimney.

On behalf of Sacmi Forni:

G. Frignani

G. Masina

EUROPEAN COMMISSION
DIRECTORATE-GENERAL JRC
JOINT RESEARCH CENTRE
Institute for Prospective Technological Studies

Integrated Pollution Prevention and Control

Reference Document on
Best Available Techniques in the

Ceramic Manufacturing Industry

Dated December 2006

Edificio EXPO, c/ Inca Garcilaso s/n, E-41092 Sevilla - Spain
Telephone: direct line (+34-95) 4488-284, switchboard 4488-318. Fax: 4488-426.
Internet: http://eippcb.jrc.es; Email: JRC-IPTS-EIPPCB@cec.eu.int

3.3 Presentation of emission and consumption data

This section reports on the ranges of currently observed emission and consumption levels for the manufacturing processes. Information includes currently observed usage of energy, water and raw materials and, as far as available, data include emissions to air and water arising from the activities as well as inputs to and outputs from sub-processes including compositions of sludge and solid process losses. Noise emission data are not included, because many noise aspects are not really sector specific and no suitable noise emission data for ceramic manufacturing processes are available.

Performance data will be qualified as far as possible with details on operating conditions, sampling and analytical methods, and statistical presentations (e.g. averages, maxima, minima and ranges).

Regarding the standard conditions for measurements of volume flows and concentrations, see the following definitions, which are also stated in the Glossary:

m^3/h	volume flow: if not otherwise mentioned in this document, the volume flows refer to 18 vol-% oxygen and standard state.
mg/m^3	concentration: if not otherwise mentioned in this document, the concentrations of gaseous substances or mixtures of substances refer to dry flue-gas at 18 vol-% oxygen and standard state, and benzene concentrations refer to 15 vol-% oxygen and standard state.
standard state	refers to a temperature of 273 K and a pressure of 1013 hPa.

Additional useful information can be found in the Reference Document on the General Principles of Monitoring (MON).

In view of the complexity of the ceramic industry, the data in the form of examples and ranges of currently observed emission and consumption levels are summarised on a sectoral basis in tables and figures placed within this section.

3.3.1 Bricks and roof tiles

3.3.1.1 Emission data

Emissions to air and water, process losses/waste and also noise emissions arise in the manufacture of bricks and roof tiles. In this section, ranges of air pollutant emissions are presented for the firing of bricks and roof tiles. Emissions to air from other process steps, emissions to water and process losses are also described.

Emissions to air

Significant emissions to air in the manufacture of bricks and roof tiles arise in the firing process. In this context, it has to be mentioned that the emissions vary to a great extent from country to country and within countries from site to site depending on the different clay raw materials being used – because of the geological and geographical variations – as described in Section 2.3.1.1 (see in particular Table 2.1) and also on the differences in the manufacturing techniques applied to match the diversity of the product range.

In this context, the data listed in the following table, demonstrate the ranges of emissions occurring in some European countries for fluorides, chlorides, oxides of sulphur, oxides of nitrogen, dust and carbon monoxide. All the data given in this table are emissions in the uncleaned flue-gases from the kilns, i.e. without taking into account any abatement equipment [20, CERAME-UNIE, 2004], [23, TWG Ceramics, 2005], [21, Almeida, 2004].

Ditta: SACMI FORNI
presso: CERAMICA MARAZZI stab. SASSUOLO / AP6 (ESSICATOIE)

CERTIFICATO DI PRELIEVO E ANALISI N.500 DEL 29/05/1996

ANALISI GAS DI COMBUSTIONE SU FORNO (Roller Kiln)
Combustibile: GAS NATURALE

Punto di prelievo: **Camino forno 3 Gres porcellanato**

Data	Tempo	O2 %	CO mg/Nm3	SO2 mg/Nm3	NO mg/Nm3	NO2 mg/Nm3	NOx mg/Nm3	Tamb ° C	Tgas ° C
28/5/96	9:35	16,5	31	77	25	0	38	31	224
28/5/96	9:36	16,5	33	111	25	0	38	31	224
28/5/96	9:37	16,5	33	125	25	0	38	31	224
28/5/96	9:38	16,4	33	134	25	0	38	31	224
28/5/96	9:39	16,4	34	140	25	0	38	31	224
28/5/96	9:40	16,4	34	143	26	0	40	31	224
28/5/96	9:41	16,4	35	148	25	0	38	31	224
28/5/96	9:42	16,4	36	154	25	0	38	32	224
28/5/96	9:43	16,4	36	157	25	0	38	32	224
28/5/96	9:44	16,4	37	163	25	0	38	32	224
28/5/96	9:45	16,4	37	163	25	0	38	32	225
28/5/96	9:46	16,4	36	166	25	1	39	32	223
28/5/96	9:47	16,4	38	163	26	0	40	32	225
28/5/96	9:48	16,4	37	163	26	0	40	32	223
28/5/96	9:49	16,4	36	163	25	0	38	32	224
28/5/96	9:50	16,4	37	163	26	0	40	32	223
28/5/96	9:51	16,4	36	163	25	0	38	32	224
28/5/96	9:52	16,4	36	163	26	0	40	32	224
28/5/96	9:53	16,4	36	163	26	0	40	32	224
28/5/96	9:54	16,4	37	163	26	0	40	32	224
28/5/96	9:55	16,4	37	160	26	0	40	32	224
28/5/96	9:56	16,4	37	162	26	0	40	32	224
28/5/96	9:57	16,4	37	163	26	0	40	32	223
28/5/96	9:58	16,4	37	165	26	0	40	32	224
28/5/96	9:59	16,4	37	168	26	0	40	32	223
28/5/96	10:00	16,4	38	171	27	0	41	32	224
28/5/96	10:01	16,3	38	171	27	0	41	33	223
28/5/96	10:02	16,4	37	169	26	0	40	33	224
28/5/96	10:03	16,4	38	168	26	0	40	33	223
28/5/96	10:06	16,4	38	168	27	0	41	33	224
MEDIA		16	36	155	26	0	39	32	224

MISURA DI PORTATA

PORTATA Nm3/h **17250**

Il Tecnico rilevatore

807950

Analista

Via Regina Pacis, 11 - 41049 Sassuolo (Mo) - Tel. 0536/807728 - Telefax 0536/807756 - Codice Fiscale/Partita IVA 02306590361

Ditta: SACMI FORNI
presso: CERAMICA MARAZZI stab. Sassuolo

CERTIFICATO DI PRELIEVO E ANALISI N. 754 DEL 13/09/96

Analisi gas di combustione su ESSICCATOIO ORIZZONTALE RAPIDO A RULLI MULTIPIANO
(Horizontal Dryer)

Combustibile: GAS NATURALE

Punto di prelievo: Camino essiccatoio

Data	Tempo	O2 %	CO mg/Nm3	SO2 mg/Nm3	NO mg/Nm3	NO2 mg/Nm3	NOx mg/Nm3	Tamb ° C	Tgas ° C
02/09/96	16.27	19.1	92	0	2	0	3	30	120
02/09/96	16.28	19.1	93	0	2	0	3	30	125
02/09/96	16.29	19.1	92	0	2	0	3	30	129
02/09/96	16.30	19.1	92	0	2	0	3	30	129
02/09/96	16.31	19	92	0	2	0	3	30	129
02/09/96	16.32	19	91	0	2	0	3	30	129
02/09/96	16.33	19	88	0	2	0	3	30	129
02/09/96	16.34	19	90	0	2	0	3	30	129
02/09/96	16.35	19	91	0	2	0	3	30	129
02/09/96	16.36	19	92	0	2	0	3	30	129
02/09/96	16.37	19	92	0	1	0	2	30	129
02/09/96	16.38	19	95	0	2	0	3	30	129
02/09/96	16.39	19	96	0	1	0	2	30	129
02/09/96	16.40	18.9	95	0	2	0	3	30	129
02/09/96	16.41	18.9	96	0	2	0	3	30	128
02/09/96	16.42	18.9	96	0	2	0	3	30	128
02/09/96	16.43	18.9	95	0	2	0	3	30	128
02/09/96	16.44	18.8	95	0	2	0	3	30	128
02/09/96	16.45	18.8	92	0	3	0	5	30	128
02/09/96	16.46	18.8	91	0	2	0	3	30	127
02/09/96	16.47	18.8	89	0	2	0	3	30	127
02/09/96	16.48	18.8	88	0	2	0	3	30	127
02/09/96	16.49	18.7	91	0	2	0	3	30	127
MEDIA		19	92	0	2	0	3	30	128

Contenuto di acqua nel gas = 19,5 g/m3 CH_4 (vedi tabelle termodinamiche pag. 313)

Peso specifico aria secca a 120°C ⇒ $\gamma = 0{,}87 \left[\frac{Kg\ aria\ secca}{m^3\ di\ aria\ secca}\right]$

Il Tecnico rilevatore

P.to Ind. MARIANELLI — ALBO PERITI IND. REGGIO EM. N. 1007 — REGGIO E.

$$x = \frac{0{,}0195}{0{,}87} = 0{,}022 \left[\frac{Kg\ H_2O}{Kg\ aria\ secca}\right]$$

L'Analista

ORDINE DEI CHIMICI — Dott. GENNARI MORENO — 287 — CHIMICO — MODENA

da diagramma entalpico segue:

φ = bassissima

Via Regina Pacis, 11 - 41049 Sassuolo (Mo) - Tel. 0536/807728 - Telefax 0536/807756 - Codice Fiscale/Partita IVA 02306590361

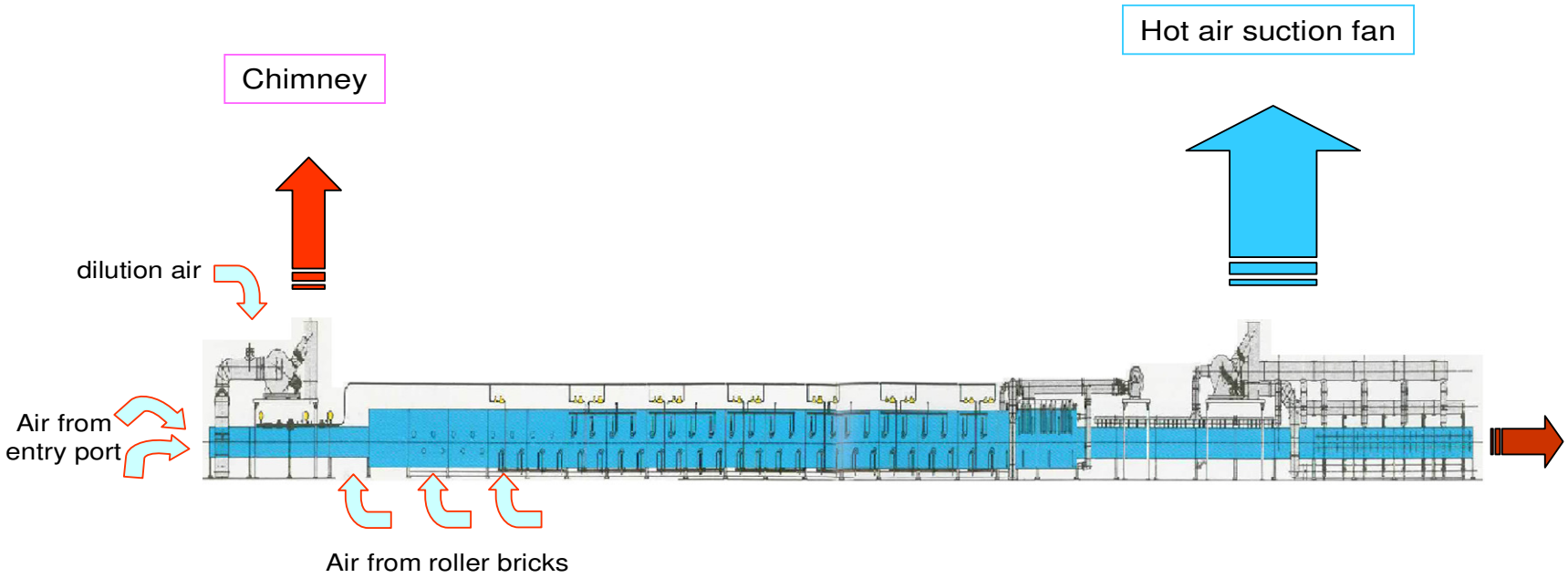
SACMI FORNI
SACMI AUTOMATION

SACMI FORNI S. p.A. Unipersonale
Via dell'Artigianato, 10
42013 Salvaterra di Casalgrande (Re) Italy
Tel. +39 0522.997011 Fax +39 0522. 840875
sacmi_forni@sacmi.it - www.sacmiforni.it
sacmi_automation@sacmi.it - www.sacmiautomation.it

Sede Legale: Via Marconi, 3 - Bologna
Cap.Soc. Euro 14.100.000,00 i.v
C.F. e Part. IVA 02471 770376 - Cod. IVA CEE: IT02471 770376
Longitudine est 10° 45' 30" - Latitudine nord 44° 34' 53"
R.E.A. Bologna n. 293370 Export BO 018854 Reg. Imp. Bo n. 40829
Società appartenente al Gruppo Sacmi Imola S.C.

a company of SACMI

SACMI



SACMI FORNI
SACMI AUTOMATION

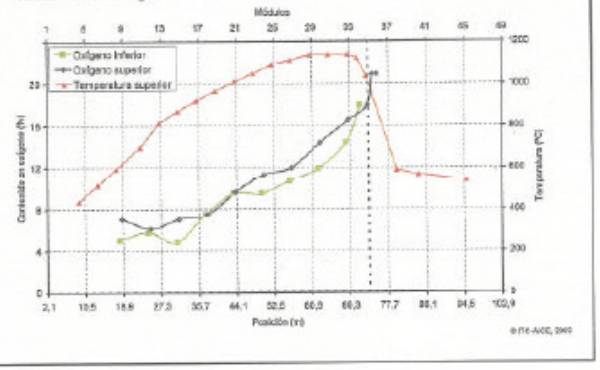
SACMI FORNI S. p.A. Unipersonale
Via dell'Artigianato, 10
42013 Salvaterra di Casalgrande (Re) Italy
Tel. +39 0522.997011 Fax +39 0522. 840875
sacmi_forni@sacmi.it - www.sacmiforni.it
sacmi_automation@sacmi.it - www.sacmiautomation.it

Sede Legale: Via Marconi, 3 - Bologna
Cap.Soc. Euro 14.100.000,00 i.v
C.F. e Part. IVA 02471 770376 - Cod. IVA CEE: IT02471 770376
Longitudine est 10° 45' 30" - Latitudine nord 44° 34' 53"
R.E.A. Bologna n. 293370 Export BO 018854 Reg. Imp. Bo n. 40829
Società appartenente al Gruppo Sacmi Imola S.C.

a company of SACMI

ANÁLISIS DEL FUNCIONAMIENTO

Contenido en oxígeno



ANÁLISIS DEL FUNCIONAMIENTO

Contenido en oxígeno

- El contenido en oxígeno en el interior del horno va en aumento a medida que avanza el ciclo de cocción.
- En general, el oxígeno del plano superior es mayor al obtenido en el plano inferior.
- El valor mínimo de oxígeno en el horno, se encuentra en el módulo 15 de la cámara inferior, a una temperatura de 870 °C y es de 4,8 %.
- En el primer módulo tras el cortafuegos el contenido en oxígeno es de 20,9 %. Por tanto, se confirma que no hay paso de gases procedentes de la zona de cocción a la de enfriamiento.

"This page has been left blank intentionally"

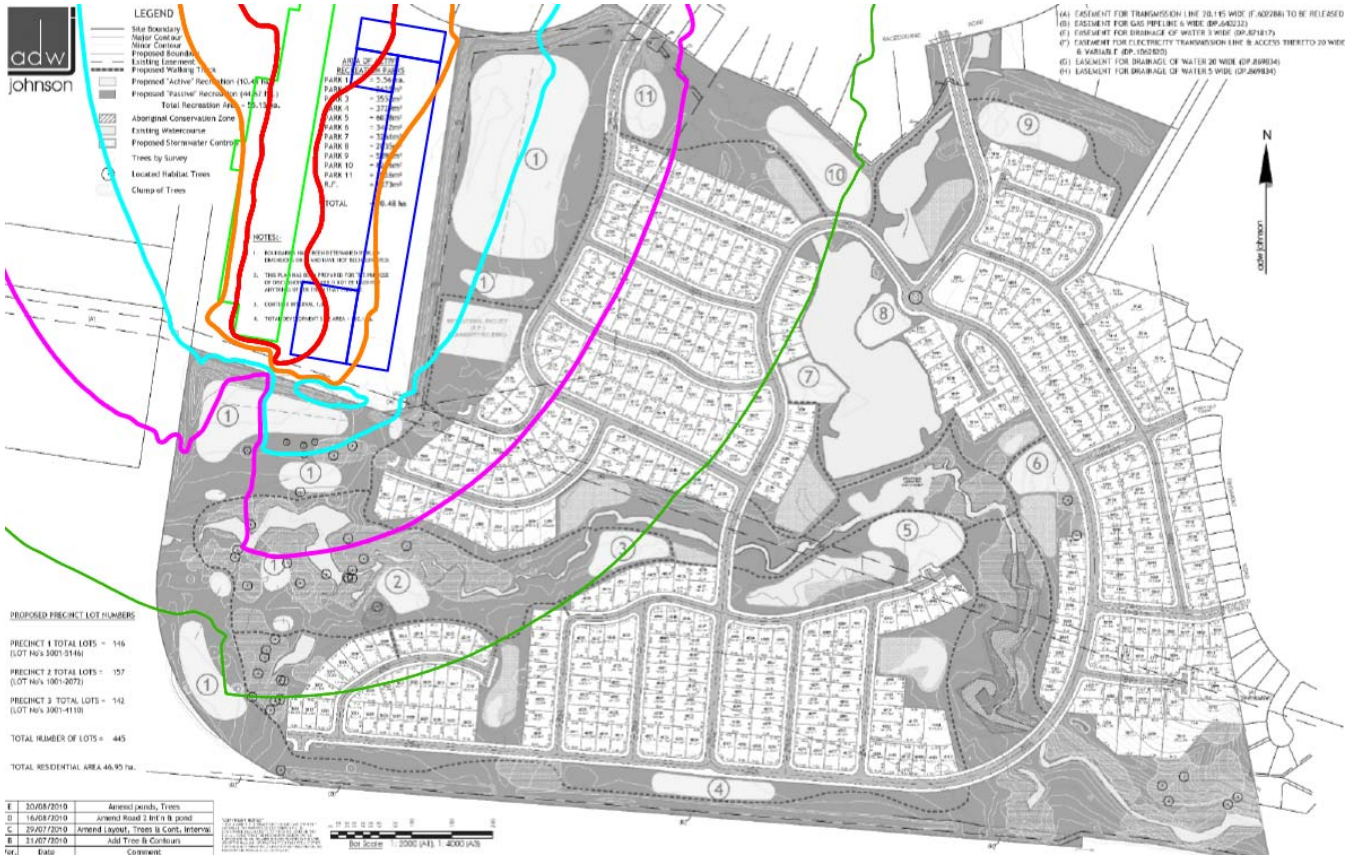
Appendix C

Revised Noise Modelling Contour Figures and Data

"This page has been left blank intentionally"

Appendix A - Noise Contours

Noise Contours Existing -Calm



KEY:

- LAeq(15minute) 55 dBA
- LAeq(15minute) 50 dBA
- LAeq(15minute) 45 dBA
- LAeq(15minute) 40 dBA
- LAeq(15minute) 35 dBA

Noise Contours Existing + Proposed Building - Calm

KEY:

- LAeq(15minute) 55 dBA
- LAeq(15minute) 50 dBA
- LAeq(15minute) 45 dBA
- LAeq(15minute) 40 dBA
- LAeq(15minute) 35 dBA

Appendix A

Report 30-2247

Appendix B - Noise Model Output

30-2247 Rutherford Tile Factory
Mitigated Source Contribution - Calm

QName	SType	Leq dB(A)
Name 256 Roseleigh, Farley Floor 1. Floor	Leq,lim	dB(A) Leq 25.8 dB(A)
Prop Mill&Silo S	Area	15.35
main roof alsynite	Area	15.04
Forklift 2	Point	14.39
Prop Mill&Silo E	Area	14.27
Existing Main Building roof alsenite	Area	14.12
Mill & Silos R	Area	13.70
Mill & Silos E	Area	12.86
Prop Milll&Silo Roof	Area	12.67
Dust collector stack 2	Point	11.95
Dust collector stack 1	Point	11.94
proposed despatch door	Area	11.84
Forklift	Point	10.39
Door (StorageE)	Area	10.03
Electric Forklift 3	Point	9.43
Spray drier stack	Point	8.98
Tile Drier Stack	Point	8.15
Spray Drier Stack	Point	8.06
Big Door 8	Area	8.03
Big Door 9	Area	7.36
Prop Despatch S	Area	7.14
Big Door 9	Area	6.97
alsenite main building	Area	6.93
Dust extraction	Point	6.40
Kiln Stack	Point	5.93
Prop Despatch E	Area	5.88
Existing Main Building E	Area	5.87
prop despatch roof alsynite	Area	5.85
Mill & Silos W	Area	4.21
alsenite 15m building	Area	3.47
Prop Mill&Silo N	Area	3.45
Prop Main S	Area	3.27
Prop Mill&Silo W	Area	2.96
main roof alsynite	Area	2.36
prop kiln stack	Point	1.74

30-2247 Rutherford Tile Factory
Mitigated Source Contribution - Calm

QName	SType	Leq dB(A)
Proposed storage E	Area	1.38
Existing Main Building S	Area	1.02
mill & silos N	Area	0.72
15m Building E	Area	0.60
Prop Main E	Area	0.39
Prop Dust Extraction	Point	-0.44
15m Building S	Area	-0.45
prop main alsynite E	Area	-1.63
Proposed storage roof	Area	-3.61
Existing Storage Building roof	Area	-3.74
Prop Despatch W	Area	-4.65
Existing Main Building W	Area	-4.89
Prop Main W	Area	-6.44
Product truck	Point	-8.00
alsenite ind building	Area	-8.01
Proposed storage S	Area	-9.16
Proposed storage N	Area	-9.43
Door (StorageW)	Area	-10.19
Existing Storage Building s	Area	-10.23
Prop Despatch N	Area	-10.31
big door storage E	Area	-10.73
truck exiting prop building	Point	-10.94
Door 4 (Medium)	Area	-11.35
Big door storage W	Area	-11.37
Existing Storage Building E	Area	-11.38
Existing Storage Building N	Area	-11.65
Remaining Sources (best guess)	Point	-12.04
proposed despatch door	Area	-12.15
Alsynite (Storage Roof)	Area	-12.33
StorageW	Area	-13.53
Mill & Silos S	Area	-13.53
Proposed storage W	Area	-14.75
Existing Storage Building S	Area	-14.83
15m Building W	Area	-17.15
Existing Main Building N	Area	-17.93

30-2247 Rutherford Tile Factory
Mitigated Source Contribution - Calm

QName	SType	Leq dB(A)
Door 2	Area	-18.28
Prop Main N	Area	-20.63
15m Building N	Area	-20.93
15m Building N	Area	-24.98
Truck	Point	-28.91
Proposed storage W	Area	-36.66
Proposed storage S	Area	-37.61
Name Door 2 at 43m	Floor 1. Floor	Leq,lim dB(A) Leq 59.4 dB(A)
Mill & Silos E	Area	55.99
Proposed storage N	Area	49.55
big door storage E	Area	48.99
Big Door 9	Area	47.36
Dust collector stack 2	Point	47.00
Door (StorageW)	Area	45.82
Big Door 8	Area	45.75
Prop Mill&Silo W	Area	44.48
Prop Mill&Silo N	Area	44.41
Dust collector stack 1	Point	43.04
Mill & Silos R	Area	40.41
15m Building E	Area	39.10
Existing Storage Building E	Area	37.65
Proposed storage roof	Area	36.32
Proposed storage W	Area	34.43
Prop Milll&Silo Roof	Area	34.01
Tile Drier Stack	Point	33.51
Existing Main Building E	Area	33.48
mill & silos N	Area	32.46
Existing Main Building roof alsenite	Area	31.62
Big Door 9	Area	30.50
main roof alsynite	Area	30.18
Prop Mill&Silo S	Area	29.43
Existing Storage Building roof	Area	28.96
Spray drier stack	Point	28.19
Alsynite (Storage Roof)	Area	26.62

30-2247 Rutherford Tile Factory
Mitigated Source Contribution - Calm

QName	SType	Leq dB(A)
Spray Drier Stack	Point	25.84
Mill & Silos W	Area	25.78
Prop Main W	Area	25.64
alsenite 15m building	Area	24.20
alsenite ind building	Area	23.64
alsenite main building	Area	23.41
Door (StorageE)	Area	21.85
Prop Mill&Silo E	Area	21.62
Prop Main E	Area	21.03
Remaining Sources (best guess)	Point	20.03
Proposed storage S	Area	19.21
Existing Storage Building S	Area	18.72
15m Building N	Area	18.51
main roof alsynite	Area	18.39
prop kiln stack	Point	18.03
Big door storage W	Area	16.85
Existing Main Building N	Area	16.21
Kiln Stack	Point	15.12
prop main alsynite E	Area	14.82
Existing Storage Building N	Area	14.54
15m Building S	Area	14.44
Prop Dust Extraction	Point	12.82
Proposed storage E	Area	12.65
Existing Main Building W	Area	12.15
Forklift	Point	10.83
Prop Main N	Area	10.36
Mill & Silos S	Area	9.97
proposed despatch door	Area	9.56
Existing Storage Building s	Area	9.38
15m Building W	Area	9.30
Door 4 (Medium)	Area	8.99
Dust extraction	Point	7.95
StorageW	Area	6.00
Prop Despatch N	Area	4.46
15m Building N	Area	4.40

30-2247 Rutherford Tile Factory
Mitigated Source Contribution - Calm

QName	SType	Leq dB(A)
Electric Forklift 3	Point	4.17
Forklift 2	Point	3.69
truck exiting prop building	Point	2.38
prop despatch roof alsynite	Area	1.96
Proposed storage W	Area	-0.48
Prop Despatch W	Area	-0.79
Prop Despatch E	Area	-2.05
Door 2	Area	-2.62
Truck	Point	-3.86
Prop Despatch S	Area	-4.93
Prop Main S	Area	-8.31
Existing Main Building S	Area	-9.68
Product truck	Point	-12.78
proposed despatch door	Area	-17.63
Proposed storage S	Area	
Name Dunmont Cl/Regiment Road Floor 1. Floor	Leq,lim	dB(A) Leq 25.2 dB(A)
Prop Mill&Silo S	Area	14.79
Prop Mill&Silo E	Area	14.63
Mill & Silos E	Area	13.89
Mill & Silos R	Area	13.84
Prop Milll&Silo Roof	Area	13.51
main roof alsynite	Area	13.34
Forklift 2	Point	13.24
Electric Forklift 3	Point	12.85
Dust collector stack 2	Point	11.80
Dust collector stack 1	Point	11.77
Existing Main Building roof alsenite	Area	11.62
Door (StorageE)	Area	10.55
Spray drier stack	Point	10.13
Spray Drier Stack	Point	9.74
proposed despatch door	Area	9.37
Kiln Stack	Point	7.76
Existing Main Building E	Area	7.09
big door storage E	Area	7.02

30-2247 Rutherford Tile Factory
Mitigated Source Contribution - Calm

QName	SType	Leq dB(A)
Prop Mill&Silo N	Area	5.60
alsenite main building	Area	5.02
Prop Despatch S	Area	4.50
mill & silos N	Area	4.19
Prop Despatch E	Area	3.82
Proposed storage roof	Area	3.71
Door 4 (Medium)	Area	3.52
prop despatch roof alsynite	Area	3.31
Forklift	Point	2.58
Proposed storage E	Area	1.91
Existing Storage Building roof	Area	1.49
main roof alsynite	Area	1.41
Mill & Silos W	Area	1.28
Prop Main S	Area	0.72
Prop Mill&Silo W	Area	0.32
Existing Storage Building E	Area	0.01
prop kiln stack	Point	-0.86
Tile Drier Stack	Point	-0.94
Dust extraction	Point	-2.08
Prop Dust Extraction	Point	-2.28
Alsynite (Storage Roof)	Area	-2.70
Big Door 9	Area	-2.73
alsenite ind building	Area	-3.00
Proposed storage N	Area	-6.86
Prop Main E	Area	-7.15
Existing Main Building W	Area	-7.23
15m Building S	Area	-7.54
truck exiting prop building	Point	-7.88
Proposed storage S	Area	-7.95
Prop Main W	Area	-8.11
Door (StorageW)	Area	-8.75
Prop Despatch N	Area	-9.32
Existing Storage Building N	Area	-9.67
Existing Main Building S	Area	-10.21
Prop Despatch W	Area	-11.05

30-2247 Rutherford Tile Factory
Mitigated Source Contribution - Calm

QName	SType	Leq dB(A)
Big door storage W	Area	-11.42
Big Door 8	Area	-11.99
Remaining Sources (best guess)	Point	-12.78
Big Door 9	Area	-12.94
alsenite 15m building	Area	-13.08
Proposed storage W	Area	-13.51
prop main alsynite E	Area	-14.64
StorageW	Area	-15.44
Existing Storage Building S	Area	-15.79
15m Building E	Area	-15.81
Existing Storage Building s	Area	-15.95
Mill & Silos S	Area	-17.14
15m Building W	Area	-18.01
Existing Main Building N	Area	-18.32
Prop Main N	Area	-20.24
15m Building N	Area	-20.92
Door 2	Area	-20.92
15m Building N	Area	-25.62
Product truck	Point	-27.13
proposed despatch door	Area	-29.76
Truck	Point	-32.60
Proposed storage S	Area	-36.83
Proposed storage W	Area	-37.47
Name Heritage Green East of Site	Floor 1. Floor	Leq,lim dB(A) Leq 40.7 dB(A)
Prop Mill&Silo E	Area	33.58
main roof alsynite	Area	33.23
Existing Main Building roof alsenite	Area	30.02
Prop Mill&Silo S	Area	29.98
Prop Milll&Silo Roof	Area	29.29
Door (StorageE)	Area	28.19
proposed despatch door	Area	26.75
Dust collector stack 1	Point	24.75
Dust collector stack 2	Point	24.72
Kiln Stack	Point	24.66

30-2247 Rutherford Tile Factory
Mitigated Source Contribution - Calm

QName	SType	Leq dB(A)
Spray Drier Stack	Point	23.90
Existing Main Building E	Area	23.80
alsenite main building	Area	23.61
Prop Despatch E	Area	23.27
Mill & Silos E	Area	21.73
Mill & Silos R	Area	21.63
Prop Despatch N	Area	21.54
main roof alsynite	Area	21.39
prop despatch roof alsynite	Area	20.64
Prop Mill&Silo N	Area	20.04
Spray drier stack	Point	19.59
prop kiln stack	Point	19.32
Proposed storage E	Area	18.65
Proposed storage roof	Area	17.93
Prop Dust Extraction	Point	17.69
Prop Main E	Area	16.28
prop main alsynite E	Area	15.86
Prop Mill&Silo W	Area	15.63
Dust extraction	Point	13.51
Door 4 (Medium)	Area	13.28
Big Door 9	Area	12.53
Forklift 2	Point	12.45
Tile Drier Stack	Point	12.19
Electric Forklift 3	Point	11.63
Alsynite (Storage Roof)	Area	11.36
truck exiting prop building	Point	11.30
Prop Main W	Area	10.93
Forklift	Point	10.54
Existing Main Building W	Area	9.23
Mill & Silos W	Area	8.73
mill & silos N	Area	8.29
Proposed storage N	Area	7.09
Proposed storage S	Area	6.99
Door (StorageW)	Area	6.77
Big Door 8	Area	6.59

30-2247 Rutherford Tile Factory
Mitigated Source Contribution - Calm

QName	SType	Leq dB(A)
Prop Despatch S	Area	6.48
Prop Main S	Area	5.72
Prop Despatch W	Area	5.41
Big Door 9	Area	4.99
big door storage E	Area	4.25
Existing Storage Building roof	Area	3.95
Remaining Sources (best guess)	Point	2.68
alsenite 15m building	Area	2.48
Big door storage W	Area	2.25
15m Building S	Area	2.25
Existing Storage Building E	Area	1.52
Proposed storage W	Area	-0.15
Existing Main Building N	Area	-0.91
15m Building E	Area	-1.01
Prop Main N	Area	-1.38
Existing Main Building S	Area	-1.79
15m Building W	Area	-2.79
alsenite ind building	Area	-2.96
StorageW	Area	-3.26
Door 2	Area	-3.97
Existing Storage Building N	Area	-4.09
Mill & Silos S	Area	-6.53
Existing Storage Building S	Area	-7.98
Existing Storage Building s	Area	-8.98
15m Building N	Area	-11.13
15m Building N	Area	-11.37
proposed despatch door	Area	-13.38
Product truck	Point	-14.14
Proposed storage S	Area	-19.53
Proposed storage W	Area	-21.69
Truck	Point	-23.05
Name Heritage Green South of Site	Floor 1. Floor	Leq,lim dB(A) Leq 44.4 dB(A)
Forklift 2	Point	38.39
Forklift	Point	37.06

30-2247 Rutherford Tile Factory
Mitigated Source Contribution - Calm

QName	SType	Leq dB(A)
Prop Despatch S	Area	34.86
Electric Forklift 3	Point	34.30
Existing Main Building roof alsenite	Area	33.78
Dust extraction	Point	31.90
Prop Main S	Area	29.38
proposed despatch door	Area	29.06
Existing Main Building E	Area	29.01
main roof alsynite	Area	28.92
Existing Main Building S	Area	27.38
alsenite main building	Area	26.60
Prop Despatch W	Area	22.92
Prop Milll&Silo Roof	Area	22.75
Door (StorageW)	Area	21.89
Door 2	Area	20.85
Mill & Silos R	Area	20.65
Mill & Silos E	Area	20.53
Dust collector stack 2	Point	20.52
Prop Mill&Silo S	Area	20.01
prop despatch roof alsynite	Area	19.66
Prop Main E	Area	19.36
Prop Dust Extraction	Point	19.14
main roof alsynite	Area	17.48
Dust collector stack 1	Point	17.44
Spray Drier Stack	Point	17.37
Kiln Stack	Point	16.96
Product truck	Point	16.32
Prop Mill&Silo W	Area	15.54
Spray drier stack	Point	15.37
Tile Drier Stack	Point	14.75
Big Door 9	Area	14.14
Prop Despatch E	Area	14.09
Mill & Silos W	Area	13.73
Prop Main W	Area	12.86
prop main alsynite E	Area	11.57
Existing Main Building W	Area	11.53

30-2247 Rutherford Tile Factory
Mitigated Source Contribution - Calm

QName	SType	Leq dB(A)
Prop Mill&Silo N	Area	9.47
Proposed storage W	Area	9.03
Door 4 (Medium)	Area	8.69
Remaining Sources (best guess)	Point	6.72
Big Door 8	Area	6.57
Prop Mill&Silo E	Area	6.52
mill & silos N	Area	6.03
15m Building S	Area	5.68
alsenite 15m building	Area	5.40
Prop Despatch N	Area	5.13
prop kiln stack	Point	4.77
Big Door 9	Area	4.65
Existing Storage Building s	Area	3.73
Door (StorageE)	Area	3.16
15m Building E	Area	2.62
big door storage E	Area	2.44
Proposed storage N	Area	1.96
Existing Storage Building E	Area	1.57
Big door storage W	Area	1.34
Proposed storage roof	Area	-0.59
Existing Storage Building N	Area	-0.86
StorageW	Area	-1.77
Proposed storage S	Area	-2.80
15m Building W	Area	-3.19
Proposed storage E	Area	-3.78
Existing Storage Building roof	Area	-3.95
Existing Main Building N	Area	-6.86
proposed despatch door	Area	-7.55
Alsynite (Storage Roof)	Area	-8.40
Mill & Silos S	Area	-8.56
Existing Storage Building S	Area	-8.79
Proposed storage W	Area	-9.86
alsenite ind building	Area	-10.40
Truck	Point	-11.25
Prop Main N	Area	-11.41

30-2247 Rutherford Tile Factory
Mitigated Source Contribution - Calm

QName	SType	Leq dB(A)
15m Building N	Area	-12.28
15m Building N	Area	-12.65
truck exiting prop building	Point	-21.60
Proposed storage S	Area	
Name Kenvil Close	Floor 1. Floor	Leq,lim dB(A) Leq 30.1 dB(A)
Mill & Silos E	Area	21.90
Prop Mill&Silo E	Area	20.60
Prop Milll&Silo Roof	Area	19.63
Mill & Silos R	Area	19.22
Dust collector stack 2	Point	17.91
Dust collector stack 1	Point	17.85
main roof alsynite	Area	17.71
Existing Main Building roof alsenite	Area	16.39
Door (StorageE)	Area	16.13
Spray Drier Stack	Point	15.26
Spray drier stack	Point	14.58
big door storage E	Area	14.55
Prop Mill&Silo S	Area	14.06
Proposed storage roof	Area	13.77
proposed despatch door	Area	13.14
Kiln Stack	Point	11.91
Prop Mill&Silo N	Area	11.49
Tile Drier Stack	Point	11.17
Existing Main Building E	Area	10.85
alsenite main building	Area	9.86
Existing Storage Building roof	Area	9.24
Big Door 9	Area	8.54
Alsynite (Storage Roof)	Area	8.19
Proposed storage E	Area	7.64
Prop Despatch E	Area	7.45
prop despatch roof alsynite	Area	7.17
Prop Despatch N	Area	6.74
alsenite ind building	Area	6.12
Existing Storage Building E	Area	6.08

30-2247 Rutherford Tile Factory
Mitigated Source Contribution - Calm

QName	SType	Leq dB(A)
Door 4 (Medium)	Area	6.04
alsenite 15m building	Area	5.99
main roof alsynite	Area	5.84
mill & silos N	Area	5.82
Mill & Silos W	Area	5.55
Prop Mill&Silo W	Area	4.28
prop kiln stack	Point	3.63
Prop Dust Extraction	Point	1.41
Door (StorageW)	Area	1.29
Dust extraction	Point	0.92
Forklift 2	Point	0.84
Electric Forklift 3	Point	0.43
Proposed storage W	Area	0.10
Proposed storage N	Area	-1.60
Forklift	Point	-2.24
Prop Main E	Area	-2.56
Existing Main Building W	Area	-3.03
truck exiting prop building	Point	-3.05
Proposed storage S	Area	-3.23
Prop Main W	Area	-3.49
Existing Storage Building N	Area	-4.99
15m Building E	Area	-5.47
Big Door 9	Area	-5.49
Big Door 8	Area	-6.13
Big door storage W	Area	-6.31
Remaining Sources (best guess)	Point	-7.95
Prop Despatch W	Area	-8.07
15m Building S	Area	-8.14
Mill & Silos S	Area	-8.24
Prop Despatch S	Area	-9.01
StorageW	Area	-9.22
Prop Main S	Area	-9.80
prop main alsynite E	Area	-10.23
Existing Storage Building S	Area	-11.18
Existing Storage Building s	Area	-11.81

30-2247 Rutherford Tile Factory
Mitigated Source Contribution - Calm

QName	SType	Leq dB(A)	
Prop Main N	Area	-11.88	
Existing Main Building N	Area	-12.80	
15m Building W	Area	-13.08	
Existing Main Building S	Area	-13.79	
15m Building N	Area	-15.98	
Door 2	Area	-17.25	
15m Building N	Area	-20.81	
Product truck	Point	-25.24	
proposed despatch door	Area	-26.71	
Truck	Point	-27.01	
Proposed storage S	Area	-31.19	
Proposed storage W	Area	-32.21	
Name Mount Vale Street	Floor 1. Floor	Leq,lim	dB(A) Leq 29.0 dB(A)
Mill & Silos E	Area	19.98	
Prop Mill&Silo E	Area	19.28	
Prop Milll&Silo Roof	Area	18.24	
Mill & Silos R	Area	17.97	
Prop Mill&Silo S	Area	17.50	
main roof alsynite	Area	17.11	
Dust collector stack 2	Point	16.31	
Dust collector stack 1	Point	16.26	
Existing Main Building roof alsenite	Area	15.65	
Door (StorageE)	Area	14.81	
Spray Drier Stack	Point	14.21	
Spray drier stack	Point	13.31	
big door storage E	Area	13.24	
proposed despatch door	Area	12.92	
Prop Mill&Silo N	Area	11.74	
Kiln Stack	Point	11.19	
Proposed storage roof	Area	10.29	
Existing Main Building E	Area	10.19	
mill & silos N	Area	9.94	
alsenite main building	Area	9.11	
Prop Despatch E	Area	7.17	

30-2247 Rutherford Tile Factory
Mitigated Source Contribution - Calm

QName	SType	Leq dB(A)
Existing Storage Building roof	Area	7.02
prop despatch roof alsynite	Area	6.84
Proposed storage E	Area	6.34
Prop Despatch N	Area	6.32
Door 4 (Medium)	Area	5.76
Mill & Silos W	Area	5.26
main roof alsynite	Area	5.23
Alsynite (Storage Roof)	Area	4.71
Existing Storage Building E	Area	4.67
Prop Mill&Silo W	Area	4.47
Tile Drier Stack	Point	4.33
alsenite ind building	Area	3.44
Electric Forklift 3	Point	3.13
prop kiln stack	Point	2.99
Prop Main E	Area	2.36
Forklift 2	Point	1.89
Prop Dust Extraction	Point	1.15
Dust extraction	Point	0.80
Big Door 9	Area	0.71
Forklift	Point	-0.29
Proposed storage N	Area	-1.91
Prop Despatch S	Area	-3.46
Door (StorageW)	Area	-3.57
Existing Main Building W	Area	-3.65
truck exiting prop building	Point	-4.04
prop main alsynite E	Area	-4.10
Prop Main W	Area	-4.23
Proposed storage S	Area	-4.27
Prop Main S	Area	-5.69
Existing Storage Building N	Area	-6.30
Big Door 8	Area	-7.42
Big door storage W	Area	-7.54
Proposed storage W	Area	-7.87
Prop Despatch W	Area	-7.92
Big Door 9	Area	-8.50

30-2247 Rutherford Tile Factory
Mitigated Source Contribution - Calm

QName	SType	Leq dB(A)
15m Building S	Area	-9.10
Remaining Sources (best guess)	Point	-9.18
alsenite 15m building	Area	-9.28
15m Building E	Area	-11.24
StorageW	Area	-11.64
Existing Storage Building S	Area	-12.24
Mill & Silos S	Area	-12.31
Existing Main Building S	Area	-12.70
Existing Storage Building s	Area	-12.88
Existing Main Building N	Area	-14.01
15m Building W	Area	-14.18
Prop Main N	Area	-15.99
15m Building N	Area	-17.12
Door 2	Area	-17.60
15m Building N	Area	-21.93
Product truck	Point	-25.27
proposed despatch door	Area	-26.47
Truck	Point	-28.59
Proposed storage S	Area	-32.47
Proposed storage W	Area	-33.34
Name Southern Boundary	Floor 1. Floor	Leq,lim dB(A) Leq 47.2 dB(A)
Prop Main S	Area	40.76
Forklift 2	Point	40.76
Electric Forklift 3	Point	39.21
Prop Despatch S	Area	38.23
main roof alsynite	Area	35.89
Prop Despatch E	Area	33.34
Prop Dust Extraction	Point	32.04
Prop Mill&Silo E	Area	31.24
proposed despatch door	Area	30.35
Forklift	Point	29.17
Door (StorageE)	Area	25.85
Prop Mill&Silo S	Area	25.00
Prop Milll&Silo Roof	Area	24.80

30-2247 Rutherford Tile Factory
Mitigated Source Contribution - Calm

QName	SType	Leq dB(A)
Mill & Silos R	Area	24.17
Prop Main E	Area	23.85
Existing Main Building S	Area	23.16
main roof alsynite	Area	22.74
Existing Main Building roof alsenite	Area	22.59
Mill & Silos E	Area	22.50
prop despatch roof alsynite	Area	21.70
Dust extraction	Point	19.06
prop main alsynite E	Area	18.68
Dust collector stack 2	Point	18.60
Dust collector stack 1	Point	18.59
Spray Drier Stack	Point	17.22
prop kiln stack	Point	17.18
Tile Drier Stack	Point	17.04
Proposed storage E	Area	16.84
Spray drier stack	Point	16.78
Prop Main W	Area	16.06
Big Door 9	Area	15.12
Prop Mill&Silo N	Area	14.69
Kiln Stack	Point	13.70
Existing Main Building E	Area	13.67
alsenite main building	Area	13.41
Prop Mill&Silo W	Area	11.46
Door 4 (Medium)	Area	10.81
Prop Despatch W	Area	10.23
Big Door 8	Area	10.11
Prop Despatch N	Area	9.26
Remaining Sources (best guess)	Point	8.93
truck exiting prop building	Point	8.77
Door (StorageW)	Area	8.40
alsenite 15m building	Area	8.28
Mill & Silos W	Area	8.27
Big Door 9	Area	8.10
Existing Main Building W	Area	7.81
mill & silos N	Area	7.47

30-2247 Rutherford Tile Factory
Mitigated Source Contribution - Calm

QName	SType	Leq dB(A)
15m Building S	Area	6.84
15m Building E	Area	5.74
Proposed storage N	Area	4.20
Door 2	Area	2.48
Proposed storage roof	Area	2.30
Proposed storage S	Area	0.69
Existing Storage Building N	Area	0.46
Proposed storage W	Area	-0.56
big door storage E	Area	-1.69
Big door storage W	Area	-2.63
Existing Storage Building roof	Area	-2.70
Existing Storage Building s	Area	-3.08
Existing Main Building N	Area	-5.13
Alsynite (Storage Roof)	Area	-5.66
Existing Storage Building E	Area	-6.01
proposed despatch door	Area	-6.10
Mill & Silos S	Area	-6.29
15m Building W	Area	-7.23
Existing Storage Building S	Area	-7.27
Prop Main N	Area	-8.31
StorageW	Area	-8.48
alsenite ind building	Area	-8.89
Product truck	Point	-9.07
15m Building N	Area	-11.04
15m Building N	Area	-16.62
Truck	Point	-22.25
Proposed storage W	Area	-25.11
Proposed storage S	Area	

"This page has been left blank intentionally"

Appendix D

Revised Soil and Water Figures and SWMP

"This page has been left blank intentionally"

AECOM

Cad ref: K:\60099477_NCIA_Tile_Plnt\5. CADD\5.3 Working\AUTOCAD\DWG\60099477-FIGURE3.dwgt modified: 19 Feb 10 - 14:27

60099477

PRE-DEVELOPMENT CATCHMENT MAP
NCIA TILE PLANT
175 RACECOURSE ROAD, RUTHERFORD

Figure 3

AECOM

NEW DETENTION BASIN APPROX.
VOLUME 835m³.
Ø450 HEADWALL OUTLET AT 15.1.
SPILLWAY RL = 16.2m
BASE RL = 14.7m

OUTLET TO STONY CREEK APPROX 200m DOWNSTREAM.

FOUR OSD TANKS 1.5m DEEP x 10m DIA.
TOTAL VOLUME 470m³
1 x Ø150 ORIFICE OUTLET

OVERLAND FLOW PATH.

BDY 474.83

PRELIMINARY PIPE LOCATION.

GRAVEL FIRE TRUCK ACCESS

NEW WET DETENTION BASIN
APPROX. VOLUME 4800m³
PWL 17.85m
SPILLWAY 19.00m
BASE R.L 16.5m

PROPOSED BUILDING
ASSUMED FFL 19.5
ROOF DRAINAGE TO BASIN 5.

ROOF DRAINAGE TO OSD TANKS.

ROOF DRAINAGE TO BASIN 2.

ROOF DRAINAGE TO BASIN 5.

GRAVEL FIRE TRUCK ACCESS 6m WIDE

SW PIT WITH Ø100
ORIFICE OUTLET AT 17.85

BDY 170.38

NEW CONCRETE PAVEMENT

BASIN 2

NEW DETENTION BASIN APPROX.
VOLUME 15,900m³.
Ø225 HEADWALL OUTLET AT 17.15m
SPILLWAY RL = 19m
BASE RL = 17m

BASIN 5

ROOF DRAINAGE TO BASIN 5.

GRAVEL FIRE TRUCK ACCESS 6m WIDE

NEW CONCRETE PAVEMENT

EXISTING CONCRETE

BDY 19.58

BDY 108.65

ROOF DRAINAGE TO BASIN 2.

EXISTING BUILDING

ROOF DRAINAGE TO SWALE.

ROOF DRAINAGE TO OSD TANKS.

EXISTING OFFICE BUILDING

EXISTING CONCRETE

EXISTING SWALE.

(EASEMENT FOR TRANSMISSION LINES)

EXISTING DETENTION BASIN

PRELIMINARY PIPE LOCATION.

BDY 193.279

EXISTING SWALE

BDY 131.37

BDY 573.09

375mm PIPE OUTLET 18.8m.

EXISTING BASIN
BASE 18.5m
TWL 19.4m

FOUR OSD TANKS 1.5m DEEP x 10m DIA.
TOTAL VOLUME 470m².
1 x Ø150 ORIFICE OUTLET

OUTLET TO STONY CREEK APPROX 200m DOWNSTREAM.

BDY 249.91

BDY 21.28

EASEMENT FOR TRANSMISSION LINES 35.175m WIDE

RACECOURSE ROAD

DP 869834
SITE AREA (LOT 101) = 16.83ha

SCALE 1:2000

Cad ref: K:\60099477_NCIA_Tile_Plnt\5. CADD\5.3 Working\AUTOCAD\CIVIL\60099477-FIGURE6.dwgt modified: 19 Feb 10 - 14:37

60099477

CONCEPTUAL STORMWATER MANAGEMENT SYSTEM
NCIA TILE PLANT
175 RACECOURSE ROAD, RUTHERFORD

Figure 6

EROSION AND SEDIMENTATION CONTROL

E1. SOIL AND EROSION CONTROL MEASURES SHOWN ARE INDICATIVE ONLY.

E2. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PROVIDED WHERE SHOWN ON THE DRAWINGS, IN ACCORDANCE WITH THE SPECIFICATION AND TO BE SATISFACTION OF THE PRINCIPAL'S REPRESENTATIVE AND TO THE SATISFACTION OF THE EPA. ALL WORKS SHALL BE ERECTED AND CONSTRUCTED IN ACCORDANCE WITH THE 'BLUE BOOK' SOILS AND CONSTRUCTION, LANDCOM 2004.

E3. AN ON-SITE MEETING SHALL BE HELD WITH THE CONTRACTOR AND THE PRINCIPAL'S REPRESENTATIVE PRIOR TO ANY SITE WORKS COMMENCING. ALL ENVIRONMENTAL ASPECTS OF THE PROJECT WILL BE DISCUSSED INCLUDING STAGING OF CONSTRUCTION WORKS, STOCKPILE SITES, AND PROPOSED VEHICULAR AND PLANT ACCESS.

E4. ALL CONTROL WORK INCLUDING BUT NOT LIMITED TO DIVERSION BANKS AND CATCH DRAINS, V-DRAINS AND SILT FENCES MUST BE COMPLETED BEFORE EARTHWORKS BEGIN.

E5. STRAW BALE BARRIERS AND GEOFABRIC FENCES ARE TO BE CONSTRUCTED 1m OUTSIDE AREAS TO BE DISTURBED, PRIOR TO COMMENCEMENT OF EARTHWORKS, IMMEDIATELY AFTER CLEARING OF VEGETATION AND BEFORE REMOVAL OF TOPSOIL.

E6. CLEAN WATER IS TO BE DIVERTED AWAY FROM DISTURBED GROUND AND INTO THE DRAINAGE SYSTEM.

E7. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND PROVIDING ON-GOING ADJUSTMENT TO EROSION CONTROL MEASURES AS REQUIRED DURING CONSTRUCTION.

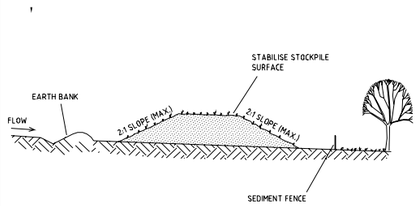
E8. ALL TOPSOIL IS TO BE STOCKPILED ON SITE FOR REUSE (AWAY FROM TREES AND DRAINAGE LINES). MEASURES MUST BE APPLIED TO PREVENT EROSION OF STOCKPILE.

E9. ALL EARTHWORKS AREAS MUST BE ROLLED EACH EVENING TO SEAL THE EARTHWORKS.

E10. ALL FILL AREAS ARE TO BE LEFT WITH A BUND AT THE TOP OF THE SLOPE AT THE END OF EACH DAY'S EARTHWORKS. THE HEIGHT OF THE BUND SHALL BE A MINIMUM OF 200mm.

E11. ALL CUT AND FILL SLOPES LOCATED OUTSIDE OF AREAS TO RECEIVE PAVEMENT ARE TO BE SEEDED AND MULCHED WITHIN 10 DAYS OF COMPLETION OF FORMATION.

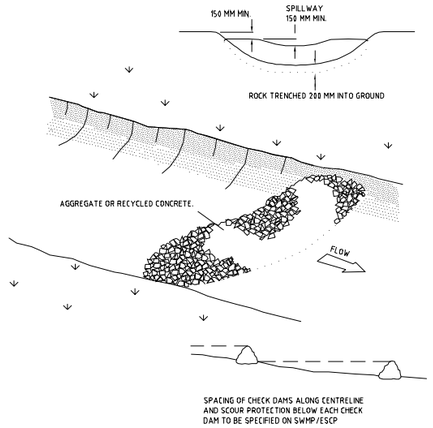
E12. AFTER REVEGETATION OF THE SITE IS COMPLETE AND THE SITE IS STABLE IN THE OPINION OF THE PRINCIPAL'S REPRESENTATIVE ALL TEMPORARY WORK SUCH AS EROSION CONTROL AND DIVERSION DRAINS SHALL BE REMOVED.



CONSTRUCTION NOTES

1. PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN EIGHT.
4. WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
5. CONSTRUCT EARTH BANKS (LOW FLOW) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES 1 TO 2 METRES DOWNSLOPE.

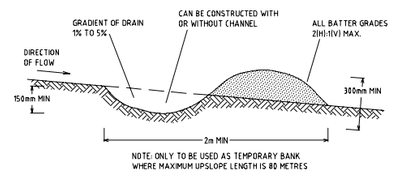
STOCKPILE



CONSTRUCTION NOTES

1. CHECK DAMS CAN BE BUILT WITH VARIOUS MATERIALS, INCLUDING ROCKS, LOGS, SANDBAGS AND STRAW BALES. THE MAINTENANCE PROGRAM SHOULD ENSURE THEIR INTEGRITY IS RETAINED, ESPECIALLY WHERE CONSTRUCTED WITH STRAW BALES. IN THE CASE OF BALES, THIS MIGHT REQUIRE THEIR REPLACEMENT EACH TWO TO FOUR MONTHS.
2. TRENCH THE CHECK DAM 200 MM INTO THE GROUND ACROSS ITS WHOLE WIDTH. WHERE ROCK IS USED, FILL THE TRENCHES TO AT LEAST 100 MM ABOVE THE GROUND SURFACE TO REDUCE THE RISK OF UNDERCUTTING.
3. NORMALLY, THEIR MAXIMUM HEIGHT SHOULD NOT EXCEED 600 MM ABOVE THE GULLY FLOOR. THE CENTRE SHOULD ACT AS A SPILLWAY, BEING AT LEAST 150 MM LOWER THAN THE OUTER EDGES.
4. SPACE THE DAMS SO THE TOE OF THE UPSTREAM DAM IS LEVEL WITH THE SPILLWAY OF THE NEXT DOWNSTREAM DAM.

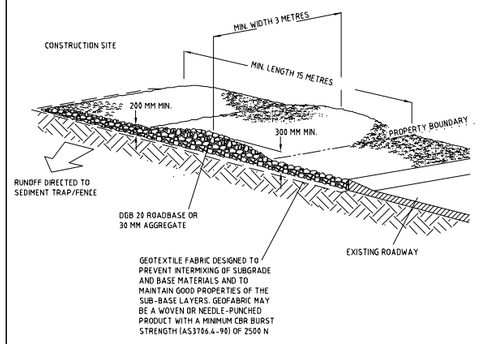
ROCK CHECK DAM



CONSTRUCTION NOTES

1. BUILD WITH GRADIENTS BETWEEN 1 PERCENT AND 5 PERCENT.
2. AVOID REMOVING TREES AND SHRUBS, IF POSSIBLE - WORK WROUND THEM.
3. ENSURE THE STRUCTURES ARE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT COULD IMPEDE WATER FLOW.
4. BUILD THE DRAINS WITH CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTIONS, NOT 'V' SHAPED.
5. ENSURE THE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.
6. COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION.

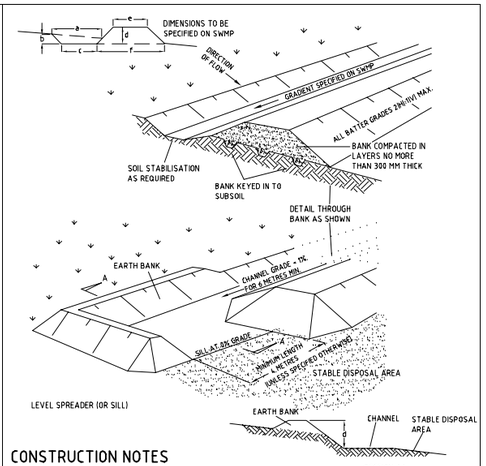
EARTH BANK (LOW FLOW)



CONSTRUCTION NOTES

1. STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE.
2. COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
3. CONSTRUCT A 200 MM THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30 MM AGGREGATE.
4. ENSURE THE STRUCTURE IS AT LEAST 15 METRES LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3 METRES WIDE.
5. WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT FENCE

STABILISED SITE ACCESS



CONSTRUCTION NOTES

1. CONSTRUCT AT THE GRADIENT SPECIFIED ON THE ESCP OR SWMP, NORMALLY BETWEEN 1 AND 5 PERCENT
2. AVOID REMOVING TREES AND SHRUBS IF POSSIBLE - WORK AROUND THEM.
3. ENSURE THE STRUCTURES ARE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT COULD IMPEDE WATER FLOW.
4. BUILD THE DRAINS WITH CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTIONS, NOT V-SHAPED, AT THE DIMENSIONS SHOWN ON THE SWMP.
5. ENSURE THE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.
6. COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION FOLLOWING TABLE 5.2 IN LANDCOM (2004).
7. WHERE DISCHARGING TO ERODIBLE LANDS, ENSURE THEY OUTLET THROUGH A PROPERLY CONSTRUCTED LEVEL SPREADER.
8. CONSTRUCT THE LEVEL SPREADER AT THE GRADIENT SPECIFIED ON THE ESCP OR SWMP, NORMALLY LESS THAN 1 PERCENT OR LEVEL.
9. WHERE POSSIBLE, ENSURE THEY DISCHARGE WATERS ONTO EITHER STABILISED OR UNDISTURBED DISPOSAL SITES WITHIN THE SAME SUBCATCHMENT AREA FROM WHICH THE WATER ORIGINATED. APPROVAL MIGHT BE REQUIRED TO DISCHARGE INTO OTHER SUBCATCHMENTS.

EARTH BANK (HIGH FLOWS)

EROSION CONTROL DETAILS
NCIA TILE PLANT
175 RACECOURSE ROAD, RUTHERFORD
Figure 7

AECOM

STABILISED VEHICLE CROSSING

OUTLET.

PRELIMINARY TEMPORARY SEDIMENT BASIN LOCATION, VOLUME 90m², 10m x 9m.

CHECK DAM (TYP).

TEMPORARY SEDIMENT BUND.

FLOW

GRAVEL FIRE TRUCK ACCESS

PROPOSED BUILDING ASSUMED FFL 19.5

PRELIMINARY TEMPORARY SEDIMENT BASIN LOCATION, VOLUME 220m², 22m x 10m.

SITE OUTLET.

BDY 476.83

BDY 27.38

BDY 170.32

NEW CONCRETE PAVEMENT

GRAVEL FIRE TRUCK ACCESS 6m WIDE

EXISTING DETENTION BASIN

STABILISED VEHICLE EXIT/ENTRY POINT AND WHEEL WASH

EXISTING DETENTION BASIN TO BE RELOCATED

PRELIMINARY TEMPORARY SEDIMENT BASIN LOCATION, VOLUME 280m², 28m x 10m.

EXISTING CONCRETE

BDY 19.58

GRAVEL FIRE TRUCK ACCESS 6m WIDE

OUTLET.

EXISTING BUILDING

BDY 24.91

FLOW

BDY 108.65

EXISTING OFFICE BUILDING

TEMPORARY SEDIMENT BUND.

STABILISED VEHICLE EXIT/ENTRY POINT.

RACECOURSE ROAD

BDY 193.279

EASEMENT FOR TRANSMISSION LINES

WEIGH BRIDGE

BDY 131.37

BDY 573.09

Cad ref: K:\60099477_NCIA_Tile_Plnt\5. CADD\3.3 Working\AUTOCAD\DWG\60099477-FIGURES1.dwg modified: 19 Feb 10 - 14:27

SCALE 1:2000

60099477

CONSTRUCTION SOIL AND WATER MANAGEMENT PLAN
NCIA TILE PLANT
175 RACECOURSE ROAD, RUTHERFORD

Figure S1

Worldwide Locations

Australia	+61-2-8484-8999
Azerbaijan	+994 12 4975881
Belgium	+32-3-540-95-86
Bolivia	+591-3-354-8564
Brazil	+55-21-3526-8160
China	+86-20-8130-3737
England	+44 1928-726006
France	+33(0)1 48 42 59 53
Germany	+49-631-341-13-62
Ireland	+353 1631 9356
Italy	+39-02-3180 77 1
Japan	+813-3541 5926
Malaysia	+603-7725-0380
Netherlands	+31 10 2120 744
Philippines	+632 910 6226
Scotland	+44 (0) 1224-624624
Singapore	+65 6295 5752
Thailand	+662 642 6161
Turkey	+90-312-428-3667
United States	+1 978-589-3200
Venezuela	+58-212-762-63 39

Australian Locations

Adelaide
Brisbane
Canberra
Darwin
Melbourne
Newcastle
Perth
Sydney
Singleton

www.aecom.com

About AECOM

AECOM is a leading provider of advanced environmental, planning, design, engineering, management and advisory services in the buildings, energy, environment, government, mining, power, transport and water markets.

From our offices across Australia and New Zealand, we leverage AECOM's global reach while providing a unique blend of local knowledge, innovation and technical excellence combined with a personal commitment to meeting our clients' specific needs.

Together, AECOM forms a strong global network of more than 43,000 professionals united by a common purpose to enhance and sustain the world's built, natural and social environments.

AECOM has over 740 offices across Africa, the Americas, Asia-Pacific, the Middle East, the United Kingdom & Europe.

For more information, please visit:
www.aecom.com

Australian Locations

Adelaide
Brisbane
Canberra
Darwin
Melbourne
Newcastle
Perth
Singleton
Sydney