NSW GOVERNMENT | Planning & Infrastructure

Contact: Felicity Greenway
Phone: 02 9228 6338
Fax: 02 9228 6466
Email: felicity.greenway@planning.nsw.gov.au

Our ref: SSD-4986
File: 11/10686

Mr Graham Woods
Incitec Pivot Ltd
PO Box 148
MAYFIELD NSW 2304

Dear Mr Woods

State Significant Development - Director General's Requirements
Incitec Ammonium Nitrate/Nitric Acid Manufacturing Facility (SSD-4986)

I have attached the Director General's environmental assessment requirements (DGRs) for the proposed Incitec Ammonium Nitrate/Nitric Acid Manufacturing Facility Project.

These requirements have been prepared in consultation with the relevant government agencies (see attachment 2), and are based on the information you have provided to date. Please note that the Director-General may alter these requirements at any time, and that these requirements will expire if you do not lodge a development application (DA) and environmental impact statement for the proposed facility within the next two years.

I would like to draw your attention to the requirement to assess the potential hazards and risks associated with the proposed development. You are expected to undertake a rigorous assessment of the hazards and risks of the proposed development, as well as cumulatively with existing and proposed developments in the surrounding area. You should also be mindful of the findings and recommendations of the recent O'Reilly Inquiry and the Parliamentary Inquiry into the Orica Kooragang Island incident as you prepare your assessment.

The Department will review the EIS for the proposed facility carefully before putting it on public exhibition, and will require you to submit an amended EIS if it does not adequately address the DGRs.

If the proposed facility is likely to have a significant impact on matters of National Environmental Significance, it will require an approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This approval would be in addition to any approvals required under NSW legislation and it is your responsibility to contact the Department of Sustainability, Environment, Water, Population and Communities to determine if an approval under the EPBC Act is required for your development (http://www.environment.gov.au or 6274 1111).

I would appreciate it if you would contact the Department at least two weeks before you propose to submit the DA and EIS for the proposed facility.

If you have any enquiries about these requirements, please contact Felicity Greenway on 02 9228 6338 or via email at felicity.greenway@planning.nsw.gov.au.

Yours sincerely

Sam Haddad
Director-General 1/12/2011

Director General's Environmental Assessment Requirements

Section 78A(8A) of the *Environmental Planning and Assessment Act*

State Significant Development

Application Number	SSD-4986
Development	The construction and operation of an ammonium nitrate and nitric acid manufacturing facility to provide for: – storage of up to 30,000 tonnes of liquid anhydrous ammonia; – 764 tonnes per day Nitric Acid Plant; – manufacture of up to 350 kilo tonnes per annum of Ammonium Nitrate; – bulk storage of 5,000t of Low Density Ammonium Nitrate (LDAN); – bagging of LDAN into 1 tonne bags and storage of up to 12, 000 tonnes; and – associated utilities, services and infrastructure.
Location	39 Heron Road, (Lot 3 DP 1117013) Kooragang Island, Newcastle
Applicant	Incitec Pivot Ltd
Date of Issue	November 2011
General Requirements	The Environmental Impact Statement (EIS) must meet the minimum form and content requirements in clauses 6 and 7 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*
Key issues	The EIS must address the following specific matters: • **Hazards and Risks**– including: – a summary of the results of a Preliminary Hazardous Analysis (PHA) undertaken for the proposed development. The PHA should be prepared in accordance with *Hazardous Industry Planning Advisory Paper No. 6 - Guidelines for Hazard Analysis,* and in particular: ➢ identify the hazards associated with the existing site and proposed development, as well as any external hazards (i.e. natural hazards) to determine the potential for off-site impacts; ➢ estimate the risks from the existing site and the overall site, including the proposed development; ➢ demonstrate that the proposed development complies with the criteria set out in *Hazardous Industry Planning Advisory Paper No 4 - Risk Criteria for Land Use Safety Planning;* ➢ estimate the cumulative impacts from the overall site and the surrounding potentially hazardous developments (existing and proposed) and demonstrate that the proposed development does not increase the cumulative risk of the area to unacceptable levels; and ➢ address all recommendations of the Department's *Newcastle and Kooragang Island Risk Assessment Study* relevant to the development; – an evaluation of the impacts of the transport of Dangerous Goods to and from the site in the surrounding area. • **Air Quality and Odour**– including: – an assessment of all air pollutants from all sources during construction and operation and from road, rail and sea transport, including any potential volatile organic compounds, particulates, odour, NO_X, N_2O and NH_3; – details of all control measures including NO_X and N_2O abatement and start-up venting controls for NO_X and NH_3 for the Nitric Acid Plant; and – cumulative impacts of the proposal in relation to existing and

	approved developments in the area, • **Noise** – including construction, operational and on-site and off-site road, rail and sea transportation noise; • **Soil and Water** – including: – an assessment of the potential soil, groundwater and surface water impacts including impacts on Newcastle Harbour; – water supply including options for reuse of process water; – proposed erosion and sediment controls (during construction) and the proposed stormwater management system (during operation); – an assessment of contaminated groundwater and soils, and acid sulfate soils, and proposed mitigation and management measures; and – potential impacts of flooding, with consideration of climate change and projected sea level rises; • **Greenhouse Gas** – including a quantitative analysis of the Scope 1 and 2 greenhouse gas emissions of the project and a qualitative analysis of the impacts of these emissions; details of measures to improve energy efficiency; • **Transport** – including details of all transport types and impacts on the safety and capacity of the local road network and shipping channel if applicable; details of the site access, internal roads and car parking; • **Waste** - including classification of all potential sources of liquid and non-liquid wastes, quantities, storage, treatment and disposal or re-use; • Surface and Groundwater – including groundwater dependant ecosystems, adjacent licenced water users, and basic landholder rights. • **Visual** – impacts on nearest sensitive receivers; • **Flora & fauna** – including impacts on critical habitats, threatened species or populations or ecological communities and their habitats in the region; and mosquito management; and • **Heritage** – including Aboriginal and non-Aboriginal heritage items and values of the site and surrounding area, taking into account the *NSW Heritage Manual* and *Assessment Heritage Significance Guidelines.*
Consultation	During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners. In particular, you must consult with the: • Office of Environment and Heritage, • Department of Primary Industries (NSW Office of Water), • Roads and Traffic Authority, • Newcastle Ports Corporation; • Newcastle City Council; and • WorkCover NSW. The EIS must describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided
Further consultation after 2 years	If you do not lodge an EIS for the development within 2 years of the issue date of these DGRs, you must consult with the Director General in relation to the requirements for lodgement.
References	The assessment of the key issues listed above must take into account relevant guidelines, policies, and plans as identified. While not exhaustive, the following attachment contains a list of some of the guidelines, policies, and plans that may be relevant to the environmental assessment of this project.

ATTACHMENT 1
Technical and Policy Guidelines

The following guidelines may assist in the preparation of the Environmental Impact Statement. This list is not exhaustive and not all of these guidelines may be relevant to your proposal.

Many of these documents can be found on the following websites:
http://www.planning.nsw.gov.au
http://www.legislation.nsw.gov.au
http://www.publications.gov.au

Policies, Guidelines and Plans

Aspect	Policy /Methodology
Hazard and Risk	
	AS/NZS 4360:2004 Risk Management
	HB 203:2006 Environmental Risk Management – Principals and Process
	State Environmental Planning Policy No 33– Hazardous and Offensive Development (SEPP 33)
	Planning Advisory Paper No. 6 – Guidelines for Hazardous Analysis (DUAP)
	Planning Advisory Paper No. 4 – Risk Criteria for Land Use Safety Planning (DUAP)
	Newcastle and Kooragang Island Area Risk Assessment Study, 1992
Transport	
	Guide to Traffic Generating Development (RTA)
	Road Design Guide (RTA)
Air Quality	
	Protection of the Environment Operations (Clean Air) Regulations 2010
	Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW (DEC)
	Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (DEC)
Odour	
	Technical Framework: Assessment and Management of Odour from Stationary Sources in NSW (DEC)
	Technical Notes: Assessment and Management of Odour from Stationary Sources in NSW (DEC)
Greenhouse Gas	
	National Greenhouse Accounts (NGA) Factors
	Guidelines for Energy Savings Action Plans (DEUS)
Noise	
	NSW Industrial Noise Policy (DECC)
	NSW Road Noise Policy (OEH)
	Environmental Noise Control Manual (DECC)
Water	
Surface Water	National Water Quality Management Strategy: Australian Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ)
	National Water Quality Management Strategy: Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC/ARMCANZ)

	National Water Quality Management Strategy: Guidelines for Sewerage Systems - Effluent Management (ARMCANZ/ANZECC)
	National Water Quality Management Strategy: Guidelines for Sewerage Systems - Use of Reclaimed Water (ARMCANZ/ANZECC)
	National Water Quality Management Strategy - Guidelines For Water Recycling: Managing Health And Environmental Risks (Phase1) (EPHC, NRMMC & AHMC)
	National Water Quality Management Strategy - Guidelines For Water Recycling: Managing Health And Environmental Risks (Phase1) (EPHC, NRMMC & AHMC)
	Managing Urban Stormwater: Council Handbook. Draft (EPA)
	Managing Urban Stormwater: Treatment Techniques (EPA)
	Managing Urban Stormwater: Source Control. Draft (EPA)
	Managing Urban Stormwater: Soils & Construction (Landcom)
	Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DEC)
	Using the ANZECC Guideline and Water Quality Objectives in NSW (DEC)
	Floodplain Risk Management Guideline: Practical Consideration of Climate Change (DECC)
Groundwater	National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia (ARMCANZ/ANZECC)
	NSW State Groundwater Policy Framework Document (DLWC)
	NSW State Groundwater Quality Protection Policy (DLWC)
	NSW State Groundwater Quantity Management Policy (DLWC) Draft
	The NSW State Groundwater Dependent Ecosystem Policy (DLWC)
	Guidelines for the Assessment and Management of Groundwater Contamination (DECC) Draft
Waste	
	Waste Avoidance and Resource Recovery Strategy (Resource NSW)
	Waste Classification Guidelines (DECC)
	Protection of the Environment Operations (Waste) Regulations 2005
Soil	
	Acid Sulfate Soil Manual (ASSMAC)
	Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC & NHMRC)
	National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC)
	State Environmental Planning Policy No. 55 – Remediation of Land
	Managing Land Contamination - Planning Guidelines SEPP 55 – Remediation of Land (DUAP and EPA)
	Contaminated Sites: Sampling Design Guidelines (NSW EPA)
	Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites (NSW EPA)

ATTACHMENT 2

Government Authority Responses to Request for Key Issues

Chron

NSW GOVERNMENT | Office of Environment & Heritage

Your Reference
Our reference : DOC11/31461; LIC09/701 Part 3A
Contact : Alan Bawden (02) 4908 6804

NSW Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Attention: Haley Rich

Dear Ms Rich

PROPOSED INCITEC NITRIC ACID/AMMONIUM NITRATE MANUFACTURING FACILITY KOORAGANG ISLAND, NEWCASTLE
PART 3A ENVIRONMENTAL ASSESSMENT - DIRECTOR GENERAL REQUIREMENTS

I refer to your email correspondence of 7 July 2011 requesting the Office of Environment and Heritage (OEH) requirements for an Environmental Assessment (EA) for the proposed Incitec nitric acid/ammonium nitrate manufacturing facility, located at 39 Heron Road, Kooragang Island - Newcastle. It is understood that the proponent has been granted approval for this application to be considered under Part 3A of the *Environmental Planning and Assessment Act 1979* and that the NSW Planning and Infrastructure (NSWPI) are seeking to issue Director General's requirements (DGR's).

The OEH understands the proposed Major Project application will involve the construction and operation of an ammonium nitrate manufacturing facility with a production capacity of 350 thousand tonne per annum (ktpa).

The OEH has reviewed the proposal and has the following additional or amended DGR's to those draft DGR's provided by NSWPI on 7 July 2011.

General Requirements

1. On the basis of the information submitted to date, it appears the proposal is a scheduled activity – 'Chemical Production', under the *Protection of the Environment Operations Act 1997* (POEO Act) and will therefore require an Environment Protection Licence (EPL), if approval is granted. The EA should address the requirements of Section 45 of the POEO Act in determining the extent of each key issue and provide sufficient information to enable the OEH to determine appropriate limits for the EPL.

2. Should project approval be granted, the proponent will need to make a separate application to the OEH for an EPL for the proposed facility prior to undertaking any on site works. Additional information is available through the *OEH Guide to Licensing* document (www.environment.nsw.gov.au/licensing/licenceguide.htm).

Key Issues

Additional point to be included under the heading Heritage
Heritage – including but not limited to:

PO Box 488G, Newcastle NSW 2300
Ground Floor 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

- Non-indigenous heritage items and values of the site and surrounding area, taking into account the *NSW Heritage Manual* and *Assessing Heritage Significance Guidelines*.

Guidelines, Policies and Plans

Under the heading **Air Quality**:

Delete - Protection of the Environment Operations (Clean Air) Regulations 2002;
Insert - Protection of the Environment Operations (Clean Air) Regulations 2010.

Under the heading **Waste** insert the following legislation:

Protection of the Environment Operations (Waste) Regulations 2005.

Under the heading – **Heritage** include the following reference documents:

Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (Department of Planning, 2005);
Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW, 2010);
Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010). Note: An Aboriginal Site Impact Recording Form must be completed and submitted to the Aboriginal Heritage Information Management System (AHIMS) Registrar, for each AHIMS site that is harmed through archaeological investigations required or permitted through these environmental assessment requirements.

If you have any questions concerning the OEH's requirements please contact Alan Bawden on (02) 4908 6804.

Yours sincerely

18 JUL 2011

MARK HARTWELL
Head Regional Operations Unit – Hunter
Environment Protection and Regulation
Office of Environment and Heritage
Department of Premier and Cabinet

Hunter New England Local Health District
Hunter New England Population Health
Direct Contact Details
Phone: (02) 49246481 Fax: (02) 49246490
Email: Christopher.Williams@hnehealth.nsw.gov.au

NSW GOVERNMENT | Health

11th November 2011

Executive Director
Major Projects Assessment
Department of Planning & Infrastructure
GPO Box 39
SYDNEY NSW 2000

Dear Sir/Madam

Attention: Haley Rich
Environmental Planning Officer

Subject: Incitec Pivot Limited - Proposed Ammonium Nitrate Facility
Heron Road, Kooragang Island

Thank you for the opportunity to comment on the Incitec Pivot Ammonium Nitrate Manufacturing Facility proposed by Incitec Pivot on Kooragang Island Newcastle. The documents relating to the proposal have been reviewed by Health Protection, Hunter New England Population Health.

In relation to health protection concerns consideration must be given to protecting the health of the community from potential environmental health hazards, which may result from this new development. To alleviate the key environmental and public health concerns the following recommendations must be addressed. They include:

- Air, water and land pollution effects from the proposal must be designed to comply with relevant legislation and be within accepted health limits. This should include a cumulative impact assessment of all industry in the vicinity of the development.

- The impact on air quality, the effect of noise generation and the pollution of surface and groundwater need to be satisfactorily addressed to ensure no detrimental effect on the human population and environment.

- A policy outlining actions to be taken in the event that formal complaints are received from members of the community.

- Ensuring there is minimal impact from the proposed development on the water quality of surrounding natural waterways, particularly from stormwater runoff.

- A Plan of Management should be prepared for the proposal, setting out a 12 month baseline leachate monitoring program with sampling and review on a quarterly basis. Long-term monitoring should be undertaken to give a continual

Health Reform Transitional Organisation Northern
Hunter New England Population Health
ABN 96 304 742 457

Locked Bag 10
Wallsend NSW 2287
Phone (02) 4924 6477 Fax (02) 4924 6490
Email PHEnquiries@hnehealth.nsw.gov.au
www.hnehealth.nsw.gov.au/hneph

accurate reflection of the impact of the proposal on the surrounding groundwater by the leachate dispersal.

- A mosquito risk assessment of the site to limit mosquito breeding sites. Furthermore, a mosquito management plan should also be developed which will reduce both nuisance biting and disease transmission mosquitoes and their subsequent effects on the occupants of the site and the local community.

- The long history of industrial use of this area and surrounds may have led to contamination of soil. Soil contamination should be addressed before development occurs. A remediation plan for the site should require that all land will have all contaminated soil removed and the final remediation be validated as safe by a Site Auditor. We believe this should occur across the site to provide adequate assurance of health protection.

- Any water cooling system and/or warm water systems must meet the NSW Code of Practice for Plumbing and Drainage, relevant Australian Standards and the NSW Code of Practice for the Control of Legionnaires Disease 2004. They must be installed and maintained to prevent the growth of *Legionella.*

- The storage and movement of Hazardous Materials on the site should be included in the site's Emergency Management Plan. The plan should reflect the increase in quantity of Hazardous Materials attributed to the proposal any the effect of these materials to employees, adjoining properties and the community.

- The Emergency Management Plan for the site should incorporate procedures that outline a strategic Early Warning System (EWS) for any incident/emergency emanating from the development that may affect adjoining properties and the local population.

If I can be of any further assistance please contact Chris Williams on 0249246481 or 0409153175.

Yours sincerely

Professor David Durrheim
Service Director
Health Protection/Population Health
Hunter New England Local Health District

NSW GOVERNMENT | Office of Water

Major Project Assessment
Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

c: Rohan Macdonald
t: 02 4904 2642
f: 02 4904 2503
e: rohan.macdonald@water.nsw.gov.au

Our ref : ER 21660
Your ref: SSD-4986

Attention: Haley Rich

16 November 2011

Dear Ms Rich

Incitec Ammonium Nitrate Manufacturing Facility Project (SSD-4986)

I refer to your email of 28 October 2011 requesting input from the NSW Office of Water into the preparation of Director-General's Requirements (DGRs) for the above proposal.

The EA should demonstrate consideration of the points below and address the Office of Water's expanded list of assessment requirements detailed in **Attachment A**:

1. Take into account the objects, water management principles and statutory provisions of the *Water Management Act 2000* including consistency with the rules of any gazetted Water Sharing Plan (WSP) in force and take into account the statutory provisions of the *Water Act 1912*.

2. That existing and proposed water licensing requirements are in accordance with NSW water legislation.

3. An assessment of the impact of the proposed development on surface and groundwater sources, groundwater-dependent ecosystems, adjacent licensed water users and basic landholder rights,

4. Details of any potential requirement to intercept groundwater, including predicted dewatering volumes, zone of drawdown and associated impact, water quality and disposal methods for the proposed development site and adjacent catchments.

5. Adequate mitigation and monitoring requirements to address surface and groundwater impacts.

6. Detailed examination of options to remediate and rehabilitate any excavated/disturbed areas and justification for criteria to completion of the project rehabilitation programme.

Key issue: Groundwater protection

The Office of Water is responsible for the management of groundwater resources so they can sustain environmental, social and economic uses for the people of NSW. The EA is required to identify groundwater issues, potential degradation to the groundwater source and mitigation measures to protect the groundwater and should outline the proposed licensing arrangements for any activities likely to intercept or extract groundwater.

Should you require further information or clarification of the points raised above, please don't hesitate to contact Rohan Macdonald, Planning and Assessment Coordinator on (02) 4904 2642.

Yours sincerely

Mark Mignanelli

Manager Major Projects, Mines and Assessment

Attachment A

Environmental Assessment Requirements
Incitec Ammonium Nitrate Manufacturing Facility Project (SSD-4986)

1. Legislation

The assessment is required to take into account the objects and water management principles of the *Water Management Act 2000* (*WMA*) and statutory requirements of the *Water Act 1912* administered by the NSW Office of Water, as applicable.

2. Water Sharing Plans

Gazetted Water Sharing Plans (WSPs) prepared under the provisions of the *WMA* establish rules for access to, and the sharing of water between the environmental needs of the surface or groundwater source and water users. If the proposal is within a gazetted WSP area the assessment is required to demonstrate consistency with the rules of the WSP.

Refer to: *http://www.water.nsw.gov.au/Water-Management/Water-sharing/default.aspx*

3. State Government technical and policy documents

The assessment is required to take into account the following NSW Government policies, as applicable:

- *NSW Groundwater Policy Framework Document - General*
- *NSW Groundwater Quality Protection Policy*
- *NSW State Groundwater Dependent Ecosystem Policy*
- *NSW State Rivers and Estuaries Policy*
- *NSW Coastal Policy*
- *NSW Water Conservation Strategy*
- *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*
- *Australian and New Zealand Guidelines for Water Quality Monitoring and Reporting*
- *Guidelines for the Assessment and Management of Groundwater Contamination*
- *Guidelines for Groundwater Protection in Australia*

4. Controlled activities guidelines

The assessment is required to take into account the following NSW Office of Water Guidelines for Controlled Activities, as applicable, for all activities to occur on waterfront land as defined in the *WMA*:

- Riparian corridors (and associated Vegetation Management Plans)
- Watercourse crossings
- Laying pipes and cables in watercourses
- Outlet structures
- In-stream works

Refer to: http://www.water.nsw.gov.au/Water-Licensing/Approvals/Controlled-activities/default.aspx

5. Groundwater

a) Licensing

All proposed groundwater works, including bores for the purpose of investigation, extraction, dewatering, testing or monitoring must be identified in the proposal and an approval obtained from the Office of Water prior to their installation.

b) Groundwater source

The assessment is required to identify groundwater issues and potential degradation to the groundwater source and provide the following:

- Details of the predicted highest groundwater table at the development site.
- Details of any works likely to intercept, connect with or infiltrate the groundwater sources.
- Details of any proposed groundwater extraction, including purpose, location and construction details of all proposed bores and expected annual extraction volumes.
- Describe the flow directions and rates and the physical and chemical characteristics of the groundwater source.
- Details of the predicted impacts of any final landform on the groundwater regime.
- Details of the existing groundwater users within the area (including the environment) and include details of any potential impacts on these users.
- Assessment of the quality of the groundwater for the local groundwater catchment.
- Details of how the proposed development will not potentially diminish the current quality of groundwater, both in the short and long term.
- Details on preventing groundwater pollution so that remediation is not required.
- Details on protective measures for any groundwater dependent ecosystems (GDEs).
- Details of proposed methods of the disposal of waste water and approval from the relevant authority.
- Assessment of the need for an Acid Sulfate Management Plan (prepared in accordance with ASSMAC guidelines).
- Assessment of the potential for saline intrusion of the groundwater and measures to prevent such intrusion into the groundwater aquifer.
- Details of the results of any models or predictive tools used.

Where potential impact/s are identified the assessment will need to identify limits to the level of impact and contingency measures that would remediate, reduce or manage potential impacts to the existing groundwater resource and any dependent groundwater environment or water users, including information on:

- Details of any proposed monitoring programs, including water levels and quality data.
- Reporting procedures for any monitoring program including mechanism for transfer of information.
- An assessment of any groundwater source/aquifer that may be sterilised as a consequence of the proposal.
- Identification of any nominal thresholds as to the level of impact beyond which remedial measures or contingency plans would be initiated (this may entail water level triggers or a beneficial use category).
- Description of the remedial measures or contingency plans proposed.
- Any funding assurances covering the anticipated post development maintenance cost, for example on-going groundwater monitoring for the nominated period.

c) Groundwater dependent ecosystems (GDEs)

The NSW Groundwater Dependent Ecosystems Policy provides guidance on the protection and management of GDEs and sets out objectives and principles. The assessment is required to identify any impacts on GDEs and address the following:

- Identification of potential GDEs within the development site and adjacent area.

- Current GDEs condition, water quantity and quality required by the ecosystems (minimum 2 year fortnightly baseline data).
- Flora and fauna assessment for all ecosystems which includes macro invertebrate and macrophyte diversity and abundance assessments within all water courses within and adjacent to the development site.
- Determine critical thresholds for negligible impacts.
- Manage groundwater extraction within defined limits thereby providing flow sufficient to sustain ecological processes and maintain biodiversity.
- Ensure sufficient groundwater of suitable quality is available to ecosystems when needed.
- Ensure the precautionary principle is applied to protect GDEs, particularly the dynamics of flow and availability and the species reliant on these attributes.
- Details on protective measures to minimise any impacts on GDEs and any potential offset areas which will be monitored and protected.

d) Contingency measures

Where potential impacts are identified the assessment will need to identify limits to the level of impact and contingency measures that would remediate, reduce or manage potential impacts to the existing groundwater resource and any dependent groundwater environment or water users, including information on:

- Details of any proposed monitoring programs, including water levels and quality data.
- Reporting procedures for any monitoring program including mechanism for transfer of information to the Office of Water.
- An assessment of any groundwater source/aquifer that may be sterilised as a consequence of the proposal.
- Identification of any nominal thresholds as to the level of impact beyond which remedial measures or contingency plans would be initiated (this may entail water level triggers or a beneficial use category).
- Description of the remedial measures or contingency plans proposed.
- Any funding assurances covering the anticipated post development maintenance cost, for example on-going groundwater monitoring for the nominated period.

6. Riparian protection

The Office of Water is responsible for the sustainable management of rivers, estuaries, wetlands and adjacent riverine plains. The assessment is required to detail, where applicable:

- The location, nature and design of any works and construction activities which may impact on the Hunter River and riparian land and likely impacts.
- The measures proposed to minimise or mitigate impacts on the Hunter River and waterfront land.

End Attachment A

16 November 2011