Queensland Government

Department of **Main Roads**

30 May 2007

The Coordinator-General
Attn: EIS Project Manager - Mr Mike Davison
Gladstone nickel project
Major Projects
Department of Infrastructure
PO Box 15009
CITY EAST QLD 4002

Dear Mike

Gladstone nickel project: Comments on the Environmental Impact Statement

Thank you for your letter dated 5 April 2007 inviting comments on the Environmental Impact Statement (EIS) for the Gladstone nickel project and for allowing some extra days to respond.

During preparation of the EIS, officers in the Main Roads (MR) district office engaged in a series of useful discussions with the proponent of this project and their consultants to assist with:

- clarifying the quantum of traffic generation,
- assessing road impacts of traffic and locational impacts of the project e.g access requirements or pipeline/conveyor crossing of roads; and
- negotiating potentially required impact mitigation strategies, in developing the EIS.

MR has reviewed the EIS and detailed comments about additional requirements to enable MR to fully understand road impacts and proposed mitigation strategies are provided in Attachment 1.

Comments fall into three broad categories:

- more complete information as required in the final Terms of Reference;
- querying information provided in the EIS/ whether done in accordance with the ToR which outlined MR legislation/policies, for example:
  - ensuring road safety and transport efficiency under the *Transport Infrastructure Act*,
  - in the *Guidelines for assessing road impacts of development;*
  - in manuals such as the *Road Planning & Design manual;* or
  - information or agreements following discussion between district officers and the proponent/consultants;
- comment about suggested road impact mitigation strategies and the need for further discussion/negotiation.

The proponent has offered at the end of Section 6.2.6.12 of the Main Report to enter into an Infrastructure Agreement with MR, to formalise responsibilities for mitigating road impacts of the project. While impact assessment and negotiation of responsibilities is yet to be finalised, MR is keen for drafting of the Infrastructure Agreement to begin, to ensure timely completion of any required works and minimise any delay to project timelines.

Corridor Management Division
Development Impact Branch
Floor 24, Mineral House, 41 George Street
Brisbane, Queensland 4000
GPO Box 2595 Brisbane Queensland 4001
ABN 57 836 727 711

Our ref P48292 SH 890/00235
Your ref ITN112197/MD40/DI
Enquiries Mr Michael Nelles
Telephone +61 7 3120 7178
Facsimile +61 7 3120 7199
Website www.mainroads.qld.gov.au

In responding to Main Roads' comments on the EIS and furthering discussions on impact mitigation, the proponent should continue to liaise with Mr Chris Hewitt, Principal Engineer (Planning and Development) Central District Office in Rockhampton on 4931 1507. Alternatively, for any policy queries with respect to the contents of this letter, please contact Mr Michael Nelles, Senior Advisor (Development Impact) on (07) 3120 7178.

Yours sincerely

Tom Ch

Chris Murphy
Manager (Development Impact)
Enc (1)

File No: 890 / 00235

B/c **MR DD (Central)**
Attn: Mr Chris Hewitt

Copy Mr Ray Ford
Statewide Planning
Gnd Floor, MR Rockhampton office

Copy Director (Business & Strategy Development)
Rail, Ports & Freight Division, QT
Attn: Mr Greg Hollands
Floor 8, Capital Hill

For your information.

Tom

for Chris Murphy
Manager (Development Impact)

30 May 2007

Attachment 1

Department of Main Roads

Review of the EIS for Gladstone Nickel Project

Section 2 - PROPOSED PROJECT

Section – 2.2 Project components

Background: This section and others in the EIS refer to the construction of seawater pipes, a material handling facility and a materials conveyor/s for transportation of materials from the proposed Wiggins Island Wharf to the proposed refinery site

Issue: MR has found insufficiently detailed information about the construction of the seawater pipes, materials handling facility and materials conveyor/s for transportation of materials, to allow MR to judge whether road impacts of project traffic are adequately dealt with.

Requirement: As required by s2.2.1 ToR, the EIS must provide sufficient information about these elements of the project in terms of:

- location/ physical interaction of the pipelines/conveyor with Hansen Rd e.g where they cross;
- volume of construction inputs and resulting traffic generation;
- assess road safety and efficiency impacts of the above traffic;
- adverse impacts on Main Roads' plans for future duplication of Hanson Road.

The EIS should also detail proposed mitigation strategies following consultation with the MR district office.

Section – 2.3.4.6 Transportation

Background: The proponent has indicated that one third of the construction workers will travel by car and two thirds by bus, with each bus having an occupancy rate of 20 persons. The proponent at the Agency Briefing on 2 May 2007 indicated that the means of controlling the use of private vehicles will be by limiting the availability of parking spaces on site. A similar approach was taken by Comalco, however within six months of commencement of construction, they had applied to Main Roads for temporary occupation of the State-controlled road reserve for the construction of additional car parking spaces for the construction workforce.

Issue 1: Main Roads is concerned that this parking ratio understates the reasonable expectation in relation to travel modes. Paragraph four of Section 6.2.3.1 of the EIS indicated that only 1000 workers of the 2200 Comalco Aluminium Refinery construction workforce travelled by bus. This is less than 50% of the construction workforce. Based on this experience, it is unlikely that a substantial high proportion travelling by bus could be reasonably assumed.

Requirement: If such an assumption is to be made, the proponents would need to indicate what measures will be taken to ensure a higher bus travel proportion. Otherwise, the proponent should amend the assessment of the construction traffic impacts based on a more realistic ratio of 50% by bus and 50% by private car. Alternatively, the proponent should indicate stronger measures to ensure conformance with the assumption indicated in the EIS.

Section – 2.3.4.6 Transportation

Background: Table 2.3.2 of the EIS indicates that 420 light vehicles and 85 buses will be used to transport workers at the peak of stage 1 construction. However Appendix B clause 4.3.1 indicates "a generation of approximately 430 light vehicles and 58 buses each day" will be used.

Section - 6.2.5 - Traffic Predictions

Sub-section 6.2.5.3: Traffic Volumes – State-controlled Traffic Network

Background: The mid-block link capacity assessment provided in Table 6.2.3 (and Table 5.2 of Appendix B) of the EIS indicates that a section of Hanson Road from Blain Drive to Red Rover Road requires the bringing forward of overtaking lane construction from 2014 to 2009 due to the project traffic. A "bring forward" percentage of 9.0 % is suggested in the report.

Issue: Main Roads' *Roads Implementation Program 2006-07 to 2010-11* (RIP) does not have a project listed for this section of the Gladstone - Mt Larcom Road (Hanson Road) to bring forward to 2009. The suggestion that overtaking lanes be constructed on this link is not acceptable in accordance with the design parameters of the RP&D manual. The distance between the noses of the Blain Drive and Red Rover Road splitter islands at each intersection is only 0.4 km. A distance of 1.2 km is required to construct a passing lane with a minimum of 0.4 km clearance between the end of the auxiliary lane and any downstream intersection. The link from Blain Drive to Red Rover Road would require duplication to four lanes to achieve any passing opportunity.

Requirement: The proponent should reassess the suggested impact mitigation strategy for this section of Hanson Road in accordance with the RP&D manual. To ensure road impacts of the project are mitigated, any upgrading works on the section of Hanson Road from Blain Drive to Red Rover Road will be the proponent's responsibility to complete, prior to the commencement of Stage 1 works.

RoM Planning & Design Manual.

Section 6.2.6 – Intersection Analysis

Sub-section 6.2.6.2 Hanson Road / Reid Road

Background: The proponent has undertaken a traffic analysis of alternatives for this existing intersection location most suited to the project. The proponent recommends a roundabout with a slip lane at 100 km/h for Gladstone bound traffic and through traffic speeds of approximately 50 km/h for Mt Larcom bound traffic.

This road link is part of the regional road network and as such is critical to the viability of transport between the neighbouring cities of Gladstone and Rockhampton. The economies of these cities are increasingly becoming integrated with respect to the provision of higher order services, industries, infrastructure and workforces; a feature that is critical to the future international competitiveness of the Central Queensland region.

The proponent has indicated in table 6.2.2 that the 2026 traffic volume of 11,900 VPD (including project traffic) is just short of the threshold of 12,000 - 15,000 vehicles per day for duplication of the links (either side of the intersection) to four lanes. The threshold needs to take into account of the percentage of heavy vehicles and the diurnal traffic regime with respect to morning and afternoon peaks.

Issue: This will impact on the overall travel speed and capacity of Hanson Road from the Calliope River Anabranch to the Landing Road intersection.

The proponent has not provided any details of the design elements of this new roundabout to permit the assessment of any adverse impacts of the proposal on the safety and efficiency of the link. Any proposal for a small diameter roundabout that could cause difficulties for the large number of heavy vehicles and vehicles with dangerous loads negotiating the tighter curves may not be appropriate for this location.

The proponent does not appear to consider the ultimate development of the Hanson Road to accommodate the future traffic demands and has not given any consideration to the future grade separation of the through traffic lanes in relation to the proposed roundabout.

Sub-section 6.2.6.12 Summary of Intersection Effects

Background: The proponent has nominated the "bring forward" methodology to assess and mitigate impacts of project traffic on the existing road infrastructure. In accordance with the underlying principles of the "*Guidelines for the Assessment of Road Impacts of Development Proposals*" (2000) it is not feasible to adopt this method of mitigating impacts of project traffic for all road infrastructure upgrading works associated with the project, given in some instances, no works are currently planned in the MR *Roads Implementation Program.*

The following outlines MR's views on the mitigation of road impacts of project-related traffic:

a) Hanson Road intersection with Reid Road

Issue: No funding is allocated in Main Roads' *Roads Implementation Program 2006-07 to 2010-11* (RIP) for this intersection.

Requirement: The proponent should upgrade this intersection before commencement of construction of Stage 1 to manage the road impacts of the project construction.

b) **Dawson Hwy / Blain Drive / Herberton Street**

Issue: No funding is allocated in Main Roads' RIP for this intersection.

Requirement: Due to the uncertainty of the future development of the Dawson Highway corridor, a bring forward contribution to future works at this intersection may be accepted.

c) Hanson Road / Blain Drive / Alf O'Rourke Drive

Issue: No funding is allocated in Main Roads' RIP for this intersection.

Requirement: Upgrading of this intersection should commence before Stage 1 construction.

d) Hanson Road / Red Rover Road

Issue: No funding is allocated in Main Roads' RIP for this intersection. The intersection analysis indicates that there are no capacity issues at the intersection. However, the mid-block capacity analysis of Hanson Road (Blain Drive – Red Rover Road) indicated capacity constraints.

Requirement: As assessment indicates there are impacts on mid-block capacity performance, modification of this intersection to dual lane should be included as part of the project.

e) Bruce Hwy / RFS Site Access Road

Issue: The project requires access to the Bruce Highway.

Requirement: Design of the access to the Bruce Highway will need to be in accordance with the *Road Planning & Design manual.* The construction of the access will be the responsibility of the proponent.

Summary requirement: the proponent should finalise assessment of the project's impacts on intersection and mid-block capacity performance and provide detailed updated information.

Following discussion with MR about strategies to mitigate road impacts of the project, MR agrees an infrastructure agreement would best clarify responsibilities and timing of any required works as suggested on page 6-20 of the Main Report.

Section 10 - SOCIO-ECONOMIC EFFECTS

Section 10.7.2.5 – Workers Village

Background: This section discusses locations for the establishment of a temporary construction village to serve the works. It is interesting to note that in section 6.2.3.1 67% of the construction workers will be travelling by bus to the worksite. However Table 6.1.1 does not include the impacts of the construction village traffic on the Bruce Highway. The proponent suggests that any construction village established on the 'Carrara' property will have a sealed access road from the Bruce Highway. Main Roads preference for access to the construction village should be via the existing intersection serving the Calliope Heritage Village. Table 6.2.2 on page 6-8 shows two-way traffic on the Gladstone - Mt Larcom Road east and west of Targinie Road increasing by 100 vehicles per day in 2009 with construction traffic. This figure seems to understate the traffic from the construction village indicated in Table 2.3.2.. Eighty-five buses will be carrying 1000 workers from the construction camp each morning and returning with them each afternoon. It is assumed that some of the 420 light vehicles will originate at the temporary construction village and therefore consequently well over 100 vehicles per day.

Issue: Main Roads is concerned that the proposed temporary construction village location to the south of the Bruce Highway will create a low speed weave action during construction peak hours on the Bruce Highway. Vehicles turning right onto the Bruce Highway will travel for a short distance at low speed before turning left off the highway. This will have an adverse impact on the safety and efficiency of through traffic. Main Roads would prefer the construction village be sited on the northern side of the Bruce Highway (with access to the Calliope River Road) to limit construction traffic movements to the Residue Storage Facility workers. This is especially important given the likely extended life of the camp over many years.

Requirement: The proponent should confirm the location of the temporary construction village and review and amend the traffic assessment to more accurately reflect the expected traffic movements associated with the project.

Section 14 – ENVIRONMENTAL MANAGEMENT PLAN

Subsection 14.8.4.10 Traffic Management Plan

Background: Section 4 of the Terms of Reference included a requirement for the preparation of Road-use Management Plan (RMP) within this section.

Issue: The EIS proposes a Traffic Management Plan which is only a small part of the overall RMP that has been identified in the Terms of Reference as a requirement of the project.

Requirement: The proponent should provide specific details in the draft RMP for each construction component of the project. At a minimum it should contain the following:

- A brief description of the project including maps showing location of facilities, access points and transport routes.
- A description of the scope of the transport task.
- Information on management of haulage tasks – by whom, what sort of vehicle, etc.
- A detailed statement of general and specific objectives of the plan rather than simply a one-line statement of "policy" to manage impacts.
- A detailed statement of the specific performance criteria including specific targets and measures.
- A strategy that provides specific responses to manage foreseen issues relating to heavy vehicles, buses and cars, service vehicles, dangerous goods movement, over-dimensional loads, and so on.
- Key aspects to be covered should include:
    - Traffic Management

reporting, changed transport tasks, changed circumstances and significant issues that arise.

Section 14.8 – Pipeline Construction Environmental Management Plan

Sub-section 14.8.4.10 – Traffic Management Plan

Background: Ridgelands Road is a rural road with very few heavy vehicles, constructed and maintained for the local seasonal farm traffic.

Issue: Pavement depths are not considered adequate for construction traffic concentrated over a short period of time and especially if periods of wet weather is encountered.

Requirement: The proponent should include in the draft Road use Management Plan for the Pipeline construction works, provisions to address:

- operational and road safety concerns in relation to the operation of construction traffic during school bus operating times and higher traffic volume journeys to and from work peaks;
- road impacts from operation of construction traffic when wet weather is encountered.

Wet weather provisions should include the following:

- immediately discontinue or moderate the use of the Ridgelands Road by heavy vehicles if, during or immediately after wet weather, any section of the road used by the construction traffic shows signs of distress, until assessment of requirement/ undertaking of repairs at no cost to MR.

Section 14.10 – Refinery & RSF Construction Environmental Management Plan

Sub-section 14.10.13 – Traffic Management Plan

Issue: Details of the construction of the materials conveyor/s and seawater pipes from Wiggins Island Wharf to the refinery site do not appear to be included in any traffic management plan.

Requirement: The proponent should include within the draft Road Use Management Plan for the Refinery and RSF construction works, provisions for the managing any road/safety impacts of construction of the materials conveyor/s and seawater pipes construction from Wiggins Island Wharf to the refinery site.

Section 14.11 – Refinery & RSF Operations Environmental Management Plan

Section 14.11.13 – Traffic Management Plan

Issue: Details of the operation of the materials conveyor/s and seawater pipes from Wiggins Island Wharf to the refinery site do not appear to be included in any traffic management plan.

Requirement: The proponent should include within the draft Road Use Management Plan for the Refinery and RSF operation, provisions for the managing any road/safety impacts of operation of the materials conveyor/s and seawater pipes from Wiggins Island Wharf to the refinery site.

Our Ref: P131669/PM
Your Ref: TN112197/MD40/DI

Strategic Policy and Executive Services

Department of
Emergency Services

15 June 2007

Mr Geoff Dickie
A/Deputy Coordinator-General
Major Projects Facilitation and Development
The Coordinator General
PO Box 15009
CITYEAST QLD 4002

Dear Mr Dickie

Thank you for your letter dated 5 April 2007 regarding the Gladstone Nickel Project. DES officers have reviewed the documentation supplied and provide the following comments regarding State Planning Policy 1/03 (SPP 1/03) and emergency response considerations:

Bushfire

DES recommends a bushfire hazard assessment is undertaken as the refinery is located within a medium bushfire hazard management area. The proponent should identify what the residual bushfire hazard will be after development has occurred as well as outlining a mitigation plan to address residual hazard.

Flood and Landslide

DES requires no additional information regarding natural hazards flood and landslide.

Emergency Response

Section 2.3.6.5 *Construction Workforce Accommodation* states the project will require temporary workers' villages and smaller "fly villages". DES recommends pre-construction phase consultation with local responders from Queensland Ambulance Service, Queensland Fire and Rescue Service and Emergency Management Queensland regarding the proposed locations, demographics and lifespan of these camps. It is recommended that the workers' villages are planned with consideration of the safety of location and layout. The appropriate agency contacts are attached.

Strategic Policy Unit

Emergency Services Complex
Cnr Kedron Park Road and Park Road
Kedron Queensland 4031

GPO Box 1425 Brisbane
Queensland 4001 Australia

Telephone +61 7 3247 8787
Facsimile +61 7 3247 8798
Website www.emergency.qld.gov.au

ABN 11 577 654 890

Chemical Hazards and Emergency Management (CHEM) Services

CHEM Services provide the following comments regarding the project:

- The proponents have not declared whether the aggregate storage of ammonia, hydrogen sulphide, LPG, hydrogen peroxide and hydrogen exceed the threshold for a possible Major Hazard Facility (MHF). The quantities of these materials declared in the appendix suggests they do not exceed the threshold (ammonia 80t, hydrogen peroxide 6t, LPG 5t, hydrogen 10t, hydrogen sulphide undeclared). Should the proponents establish that the facility does exceed the threshold for a MHF they will need to submit a notification to the Chief Executive six months before the facility is commissioned.

- Hydrogen sulphide is a key reagent generated on site by reaction of reformer hydrogen with sulphur. The EIS does not make it clear whether this material will be stored in any appreciable quantity. Management of hydrogen sulphide containment and fugitive emission sources will be of significance in assessing possible offsite impacts and nuisance caused by the facility.

- The Gladstone Nickel Project appears to come within the 0.5x10-6 risk contour of the Orica Yarwun facility. In accordance with our recommendations commenting on the EIS for a recent expansion of the Yarwun facility, Orica should now perform a formal revision to their QRA to confirm the risk contours for the site in the light of that expansion.

Should further information regarding CHEM issues be required, please do not hesitate to contact Mr Harry Pirvics, Director, CHEM Services on telephone number (07) 3247 8438, who will be pleased to assist.

Should further information regarding SPP 1/03 or emergency response be required, please do not hesitate to contact Mr Gavin McCullagh, A/Senior Policy Officer, Strategic Policy, on telephone number (07) 3247 8782, who will be pleased to assist.

Yours sincerely

Richard Williams
Director

FACSIMILE TRANSMISSION

Queensland Government
Natural Resources, Mines and Water

DATE: 7 June 2007
TO: Mike Davison
FACSIMILE NO.: 3225 8282
FROM: Rebecca Powlett
SUBJECT: Gladstone Nickel EIS
NO. OF PAGES (Inc. Cover) 32

Attached comments, hard copy is in the mail.

Natural Resources, Mines and Water

Enquiries to: Annette Caple
Level 2 209 Bolsover St Rockhampton
PO Box 1762 Rockhampton Qld 4700
Telephone: (07) 4936 4013 Facsimile: (07) 49364010

ATTACHMENT 1

GLADSTONE NICKEL PROJECT
ENVIRONMENTAL IMPACT ASSESSMENT

COMMENTS BY DEPARTMENT OF NATURAL RESOURCES AND WATER
(JUNE 2007)

EXECUTIVE SUMMARY
Water *Page ES-5*

This section states that the existing environmental approval for development at the Marlborough mining lease includes the use of water from the Fitzroy River for process use. Previous correspondence regarding the Marlborough Nickel Project indicates that Marlborough Nickel was in negations with Fitzroy River Water to access 10000Ml. However Fitzroy River Water has indicated that this never progressed.

While the Environmental Authority to mine may recognise the water for the project may come from the Fitzroy River it cannot not actually authorise extraction from the Fitzroy River. Any extraction from the Fitzroy River must be authorised under the *Water Act 2000*.

While section 2.5.6 of the EIS states that seawater will be piped from Port Curtis to be used in the beneficiation process at the Coorumburra plant and for slurry transport, the executive summary and section 5.9.3 (page 5-14) states this is only a preferred option at this stage and further investigations may be required.

The Department of Natural Resources & Water (NRW) has concerns regarding the entire project, including the Marlborough Nickel Mine if seawater is not the final secure water supply for the project.

If the proponent did require water from the Fitzroy it would be dependant on the procurement of an authority to take water (eg a water licence or water allocation).

SECTION 7 – ENVIRONMENTAL EFFECTS OF PIPELINES
7.2.4 Acid Sulfate Soils *Page 7-11*

Acid Sulfate Soil management procedures should also include verification testing of Potential or Actual Acid Sulfate Soils post liming and prior to re-burial.

7.3.3 Groundwater *Page 7-19*

The description of the existing environment for all groundwater sections in the EIS, not just the pipeline effects, does not adequately address the Terms of Reference (TOR). The TOR states that the EIS should review the quality, quantity and significance of the groundwater in the project areas. The data presented in the EIS is restricted to registered bores on the NRW Groundwater Database.

Not all bores are required to be registered and reliance solely on this data to make statements as to the significance of the groundwater resource in the project areas is considered inadequate.

7.3.4 Watercourse Crossings *Page 7-22*

The EIS adequately addresses issues related to watercourse crossings of the pipelines. It recognises that a riverine protection permit under the *Water Act 2000* may be required for some crossings. It should be noted that in areas where a water supply scheme exists the proponent may also require approval from the relevant water service provider as part of this process.

SECTION 9 – ENVIRONMENTAL EFFECTS OF RESIDUE STORAGE FACILITY

9.2 Residue Characterisation *Page 9-10*

NRW has investigated a damsite at AMTD 33.0 km on the Calliope River in the vicinity of the department's gauging station GS132001A as Castlehope.

Preliminary investigations carried out by the Department confirmed the Castlehope damsite as a future water source option for the Gladstone region.

The studies which supported the Central Queensland Regional Water Supply Strategy (CQRWSS) adopted by the Queensland Government and released in December 2006 identified various sized dams at Castlehope as options for future water supply. While the Castlehope dam was not included in the recently announced projects, it is possible that a dam will be required at the site eventually.

The Queensland Water Plan 2005-2010 provides a strategy for planning for future water needs by undertaking state-wide planning at the strategic, regional and project levels to identify water requirements for urban, industrial and rural purposes and to plan how best to meet those needs.

The Plan also identifies that Queensland has relatively few future storage sites with development potential and requires action to protect those sites for future development when required. Castlehope is a major water source development option in the Gladstone region and it is prudent that the damsite be preserved for future development. While the Residue Storage Facility is just outside the full supply area, it is believed that it would be within the flood margin required to provide a flood equivalent to a 1:500 year return period. NRW does not support development which has the potential to severely limit or potentially contaminate a future damsite.

9.3 RSF Design *Page 9-13*

Further investigation is required into the permeability of the storage facility. Soils under the proposed storage area and suitability of construction and cut-off materials are required to be further investigated.

NRW consider that the site should be a closed system. If releases or seepage from the RSF should occur, these should conform to the ANZECC human drinking water standards not livestock drinking water standards.

9.6 Surface Water *Page 9-25*

Water resources in the Calliope Catchment are subject to the Water Resource Calliope Plan 2006 (WRP) and will also be subject to the Calliope River Basin Resource Operations Plan (ROP) to be finalised towards the end of the year.

The RSF may be located on a watercourse as defined under the *Water Act 2000*. If this is the case a water licence to interfere by impoundment would be required which would in turn require the purchase of unallocated water as currently outlined in the draft Calliope ROP. An inspection will need to be undertaken by Departmental officers to determine if the storage is located on a watercourse.

If it is determined that the storage is located on a feature determined not to be a watercourse then it would be considered as a structure that interferes with overland flow water. The interfering of overland flow water is currently regulated under the Calliope WRP.

The EIS indicates that the storage will result in a reduction of mean annual flow within the Farmers Creek catchment. The Department has serious concerns regarding what impacts this will have on the catchment with particular reference to entitlement holders downstream.

The EIS recognises that the one entitlement holder on Farmers Creek will be seriously affected and that an alternate water supply may be required, however the EIS does not adequately address this issue and does not outline any options for mitigation.

The entitlement in question authorises the irrigation of 20ha or if converted under the current provisions in the draft ROP than a conversion of 120ML. It should be noted that the reduction in flow will heavily impact on the reliability of the waterhole used as storage by the entitlement holder. The ability to extract a reliable supply of water from the waterhole depends on continual inflow into the waterhole. This waterhole also provides for stock and domestic requirements for this landholder.

While this is an issue for the EPA to resolve, the Department questions the adequacy of a design capacity for a 1 in 10 year storm event.

SECTION 14 – ENVIRONMENTAL MANAGEMENT PLAN

14.8.4.4 Soil Management Plan *Page 14-17*

While the disturbance of Acid Sulfate Soils (ASS) is generally not expected on the pipeline routes, verification testing of disturbed material post liming and prior to re-burial should be included in the plan.

REMAINING COMMENTS AND REQUESTED INFORMATION RELATES TO THE CLEARING OF VEGETATION TO WHICH THE *Vegetation Management Act 1999* APPLIES.

General Requirement

The EIS does not clearly delineate how the proposed clearing meets the Performance Requirements *Regional Vegetation Management Code for Brigalow Belt and New England Tablelands Bioregions 20 November 2006* and the *Regional Vegetation Management Code for Southeast Queensland Bioregion 20 November 2006.*

In order to adequately assess the clearing of vegetation as a result of this project, NRW requires:

- Detailed evidence of how clearing meets the Performance Requirements in Part S of the *Regional Vegetation Management Code for Brigalow Belt and New England Tablelands Bioregions 20 November 2006* and *Regional Vegetation Management Code for Southeast Queensland Bioregion 20 November 2006.* If you believe that the EIS addresses the Performance Requirements of the code, for each Performance Requirement please provide specific reference to the section/s of the EIS that provides response to that Performance Requirement.
- A detailed spatial plan of the proposed clearing application area.
- Details on the method of clearing.

Note: words underlined in this document refer to words of significance described in the dictionaries of the *Regional Vegetation Management Code for Brigalow Belt and New England Tablelands Bioregions 20 November 2006* and the *Regional Vegetation Management Code for Southeast Queensland Bioregion 20 November 2006.*

PART S: Specific Requirements for clearing for significant projects: Southeast Queensland Bioregion

The proposed clearing areas associated with the **Refinery** site are required to be assessed against the Regional Vegetation Management Code for Ongoing Clearing Purposes –Southeast Queensland Bioregion ("the Code").

Performance Requirement S.2: Wetlands

Material and evidence relevant to this Performance Requirement includes:

- The subject lots contain areas that are mapped as a saline coastal flat on the 1:100,000 topographic map, which is 'like' a wetland and marsh.
- It can be reasonably expected that clearing of the site will be of a broadscale nature therefore any clearing in wetland areas is unlikely to maintain the Regional Ecosystem structure or function.
- The vegetation offset policy is *Policy for Vegetation Management Offsets 20 November 2006.* This policy is available at:

  http://www.nrw.qld.gov.au/vegetation/legislation.html

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Clearing will occur in a natural wetland and within 100 metres of a natural wetland.

The application does not meet the Performance Requirement as:

- Clearing of vegetation will not maintain the current extent of assessable vegetation associated with any natural wetland to provide –
  - a) water quality by filtering sediments, nutrients and other pollutants; and
  - b) aquatic habitat; and
  - c) terrestrial habitat

Information Required for PR S.2

- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur in or within 100 metres on a natural wetland; or
  - Meet the Performance Requirement by providing detailed evidence that demonstrates that clearing will maintain the current extent of assessable vegetation associated with any natural wetland.

Performance Requirement S.3: Watercourses

Material and evidence relevant to this Performance Requirement includes:

- The 1:100,000 topographic map sheet identifies two watercourses with a stream order of 1 and 2 within the subject lots.
- It is reasonably expected that clearing of the site will be of a broadscale nature therefore any clearing in watercourses is unlikely to maintain the Regional Ecosystem structure or function.
- The vegetation offset policy is *Policy for Vegetation Management Offsets 20 November 2006*. This policy is available at:
  http://www.nrw.qld.gov.au/vegetation/legislation.html

The application does not meet the Acceptable Solutions of this Performance Requirement as:

- Clearing will occur in a watercourse; and
- Clearing will occur within 10 metres from the high bank of a watercourse with a stream order of 1 or 2.

The application does not meet this Performance Requirement as:

- Clearing of vegetation will not maintain the current extent of assessable vegetation associated with any watercourse to provide –
  - a) bank stability by protecting against bank erosion; and
  - b) water quality by filtering sediments, nutrients and other pollutants; and
  - c) aquatic habitat; and
  - d) terrestrial habitat.

Information Required for PR S.3

- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur in or within 10 metres from a watercourse of a stream order of 1 or 2; or
  - Meet the Performance Requirement by providing detailed evidence that demonstrates how the application will maintain the current extent of assessable vegetation associated with any watercourse.

Performance Requirement S.4: Connectivity

Material and evidence relevant to this Performance Requirement includes:

- Clearing will be greater than 10 metres wide and 2 hectares in size.
- Clearing may:
  - Isolate areas of remnant vegetation.
  - Reduce the width of remnant vegetation areas to less than 200 metres.
  - Reduce the area of remnant vegetation areas to less than 50 hectares.

The application does not meet the Intended Acceptable Solution of this Performance Requirement as:

- Clearing will be greater than 10 metres wide; and
- Clearing will be greater than 2 hectares

AND

- Clearing may reduce areas of contiguous remnant vegetation to less than 10 hectares; and
- Clearing may occur in areas of contiguous remnant vegetation that are less than 10 hectares; and
- Clearing may reduce the width of remnant vegetation to less than 100 metres; and
- Clearing may occur where the width of remnant vegetation is less than 100 metres; and
- Clearing may reduce the total extent of remnant vegetation to less than 30% of the area of the lot(s) that are the subject of the application; and
- Clearing may occur where the total extent of remnant vegetation is less than 30% of the area of the lot(s) that are the subject of the application.

The application does not meet this Performance Requirement as:
Areas of retained remnant vegetation may not be—

- of sufficient size and configured in a way to maintain ecosystem functioning; and
- of sufficient size and configured in a way to remain in the landscape in spite of any threatening processes; and
- Located on the lot(s) that are the subject of the application to maintain connectivity to remnant vegetation on adjacent properties.

Information Required for PR S.4

- Please provide:
  - A detailed clearing footprint – this Performance Requirement cannot be accurately assessed unless the exact area of proposed clearing is known.

- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Intended Acceptable Solution by providing detailed evidence that clearing will not reduce areas of contiguous remnant vegetation to less than 10 hectares or 100 metres, occur in areas of contiguous remnant vegetation that are less than 10 hectares or 100 metres in width, reduce the total extent of remnant vegetation to less than 30% of the area of the lot(s) that are the subject of the application or occur where the total extent of remnant vegetation is less than 30% of the area of the lot(s) that are the subject of the application; or
  - Meet the Performance Requirement by providing detailed evidence that demonstrates how the application will retain remnant vegetation of sufficient size and configured in a way to maintain ecosystem functioning and remain in the landscape in spite of any threatening processes; and located on the lot(s) that are the subject of the application to maintain connectivity to remnant vegetation on adjacent properties.

Performance Requirement S.6: Salinity

Material and evidence relevant to this Performance Requirement includes:

- The Environmental Impact Statement has identified salinity issues in relation to soils and water quality.
- The Environmental Impact Statement has identified waterlogging issues.
- Clearing occurs in an interface between alluvial geological units and metamorphic geological units, which are potential discharge areas.
- Clearing will involve removing more than 100 hectares of remnant vegetation.
- It can be reasonably expected that clearing of the site will be of a broadscale nature and therefore that clearing may result in an increase in recharge, which can contribute to waterlogging and/or the salinisation of groundwater, surface water and soil.
- The application does not contain assessment processes consistent with the *Salinity Management Handbook, Queensland's Department of Natural Resources, 1997*, to identify potential discharge areas.

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Clearing will be greater than 5 hectares and greater than 50 metres wide and may occur:
  - In a discharge area.
  - Within 200 metres of a discharge area.

The application does not meet this Performance Requirement as:

- The application contains no assessment process consistent with the *Salinity Management Handbook, Queensland's Department of Natural Resources, 1997*, to show that waterlogging and/or the salinisation of groundwater, surface water and soil will not occur.

Information Required for PR S.6

- Please provide detailed evidence to demonstrate how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur in a discharge area or within 200 metres of a discharge area

- Meet the Performance Requirement by providing detailed evidence that demonstrates that clearing will not cause waterlogging and/or the salinisation of groundwater, surface water and soil.

Performance Requirement S.8: Essential Habitat

Material and evidence relevant to this Performance Requirement includes:

- Areas within the subject lots contain essential habitat as shown on the essential habitat map for the Wallum Froglet *(Crinia tinnula).*

Essential Habitat Factors

- The essential habitat factors for *Crinia tinnula*:
  - Include Regional Ecosystems: 12.3.3 and 12.3.12; and
  - Vegetation Community: Acidic, soft waters of Melaleuca swamps, sedge land, wet and dry heathland and wallum/woodland areas in sandy coastal lowlands, occasionally in adjacent forests with heathy understorey; may be found well away from water; and
  - Altitude: Sea level to 200m; and
  - Soils: Sandy and sandy alluvial substrates.
- A desktop assessment of the Regional Ecosystem map, spot imagery, soils and land systems information and the 1:100,000 topographic map show that at least 3 of the essential habitat factors for the wallum froglet are present in the potential application area.

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Clearing will occur in an area shown as essential habitat on the essential habitat map.

The application does not meet the Performance Requirement as:

- Clearing will not maintain the current extent of essential habitat.

Information Required for PR S.8

- Please provide detailed evidence to show how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur in an area shown as essential habitat on the essential habitat map; or
  - Meet the Performance Requirement by providing detailed evidence that demonstrates how the application will maintain the current extent of essential habitat.

Performance Requirement S.10: Acid Sulfate Soils

Material and evidence relevant to this Performance Requirement includes:

- The Environmental Impact Statement has identified issues with Acid Sulfate Soils.
- The subject lots contain areas mapped as land zone 1 and land zone 3.
- The subject lots contain areas below 5 metre Australia Height Datum.

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Clearing will occur within land zone 1 and land zone 3; and

- Clearing may occur in areas below 5 metre Australian Height Datum; and
- The Environmental Impact Statement does not contain management principles or commitment to management principles in accordance with the Soil Management Guidelines in the *Queensland Acid Sulfate Soil Technical Manual*

The application does not meet this Performance Requirement as:

- The application does not provide evidence to demonstrate that the effects of clearing will not result in the disturbance of acid sulfate soils or changes to the hydrology of the location that will either –
  a) aerate horizons containing acid sulfides; or
  b) mobilise acid and/or metals.
- The application does not provide sufficiently defined and measurable mitigation measures that may be applied if required as conditions to an approval in order to achieve this Performance Requirement.

Information Required for PR S.5

- Please provide detailed evidence that demonstrates how the application will:
- Meet the Acceptable Solution by providing detailed evidence that any clearing in land zone 1, land zone 2 or land zone 3 in areas below 5 metre Australian Height Datum-
  a) Is carried out in accordance with an acid sulfate soils environmental management plan as outlined in *State Planning Policy 2/02 Guideline: Planning and Managing Development involving Acid Sulfate Soils*; and
  b) Follows management principles in accordance with the Soil Management Guidelines in the *Queensland Acid Sulfate Soil Technical Manual*
- Meet the Performance Requirement by providing detailed evidence that demonstrates how clearing will not disturb acid sulfate soils or change the hydrology of the location that will either –
  c) aerate horizons containing acid sulfides; or
  d) mobilise acid and/or metals.

  Evidence provided to address this Performance Requirement must contain sufficiently defined and measurable mitigation measures that may be applied if required as conditions to an approval in order to achieve this Performance Requirement

PART S: Specific Requirements for clearing for significant projects: Brigalow Belt and New England Tableland Bioregions

The proposed clearing areas associated with the **Residue Storage Facility** site are required to be assessed against the Regional Vegetation Management Code for Ongoing Clearing Purposes –Brigalow Belt and New England Tableland Bioregions ("the Code").

Performance Requirement S.3: Watercourses

Material and evidence relevant to this Performance Requirement includes:

- The 1:100,000 topographic map sheet identifies several watercourses with a stream order of 1 and 2 within the subject lots.
- The 1:100,000 topographic map sheet identifies several watercourses with a stream order of 3 and 4 within the subject lots.
- The 1:100,000 topographic map sheet identifies watercourses with a stream order of 5 or greater within the subject lots.
- It is reasonably expected that clearing of the site will be of a broadscale nature therefore any clearing in watercourses is unlikely to maintain the Regional Ecosystem structure or function.
- The vegetation offset policy is *Policy for Vegetation Management Offsets 20 November 2006*. This policy is available at:
  http://www.nrw.qld.gov.au/vegetation/legislation.html

The application does not meet the Acceptable Solutions of this Performance Requirement as:

- Clearing will occur in a watercourse; and
- Clearing will occur within 50 metres from the high bank of a watercourse with a stream order of 1 and 2; and
- Clearing will occur within 100 metres from the high bank of a watercourse with a stream order of 3 and 4; and
- Clearing will occur within 200 metres from the high bank of a watercourse with a stream order of 5 or greater.

The application does not meet this Performance Requirement as:

- Clearing of vegetation will not maintain the current extent of assessable vegetation associated with any watercourse to provide –
  a) bank stability by protecting against bank erosion; and
  b) water quality by filtering sediments, nutrients and other pollutants; and
  c) aquatic habitat; and
  d) terrestrial habitat.

Information Required for PR S.3

- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur in or within the relevant distances from watercourses as stated in the Code; or
  - Meet the Performance Requirement by providing detailed evidence that demonstrates how the application will maintain the current extent of assessable vegetation associated with any watercourse.

Performance Requirement S.4: Connectivity

Material and evidence relevant to this Performance Requirement includes:

- Clearing will be greater than 25 metres wide and 5 hectares in size.
- Clearing may:
  - Isolate areas of remnant vegetation.

- Reduce the width of remnant vegetation areas to less than 200 metres.
- Reduce the area of remnant vegetation areas to less than 50 hectares.

The application does not meet the Intended Acceptable Solution of this Performance Requirement as:

- Clearing will be greater than 25 metres wide; and
- Clearing will be greater than 5 hectares

AND

- Clearing may reduce areas of contiguous remnant vegetation to less than 50 hectares; and
- Clearing may occur in areas of contiguous remnant vegetation that are less than 50 hectares; and
- Clearing may reduce the width of remnant vegetation to less than 200 metres; and
- Clearing may occur where the width of remnant vegetation is less than 200 metres; and
- Clearing may reduce the total extent of remnant vegetation to less than 30% of the area of the lot(s) that are the subject of the application; and
- Clearing may occur where the total extent of remnant vegetation is less than 30% of the area of the lot(s) that are the subject of the application.

The application does not meet the Performance Requirement as:
Areas of retained remnant vegetation may not be—

- of sufficient size and configured in a way to maintain ecosystem functioning; and
- of sufficient size and configured in a way to remain in the landscape in spite of any threatening processes; and
- located on the lot(s) that are the subject of the application to maintain connectivity to remnant vegetation on adjacent properties.

Information Required for PR S.4

- Please provide:
  - A detailed clearing footprint – this Performance Requirement can not be accurately assessed unless the exact area of proposed clearing is known.
- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Intended Acceptable Solution by providing detailed evidence that clearing will not reduce areas of contiguous remnant vegetation to less than 50 hectares or 200 metres width, occur in areas of contiguous remnant vegetation that are less than 50 hectares or 200 metres, the total extent of remnant vegetation to less than 30% of the area of the lot(s) that are the subject of the application or occur where the total extent of remnant vegetation is less than 30% of the area of the lot(s) that are the subject of the application; or
  - Meet the Performance Requirement by providing detailed evidence that demonstrates how the application will retain remnant vegetation of sufficient size and configured in a way to maintain ecosystem functioning and remain in the landscape in spite of any threatening processes; and

located on the lot(s) that are the subject of the application to maintain connectivity to remnant vegetation on adjacent properties.

Performance Requirement S.5: Soil Erosion

Material and evidence relevant to this Performance Requirement includes:

- Topographic data supplied by the application show that clearing will occur on slopes up to 40%.
- The Environmental Impact Statement identifies gully erosion issues.
- The Environmental Impact Statement has identified soils that have dispersive properties within the subject lots.
- Natural Resources and Water data shows that areas within the subject lots have unstable and very unstable soils.

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Mechanical clearing may occur on unstable soils on slopes greater than 8% and on very unstable soils on slopes greater than 5%.

The application does not meet this Performance Requirement as:
The application does not demonstrate how clearing will not result in:

a) mass movement, gully erosion, rill erosion, sheet erosion, tunnel erosion, stream bank erosion, wind erosion, or scalding; and
b) any associated loss of chemical, physical or biological fertility - including, but not limited to water holding capacity, soil structure, organic matter, soil biology, and nutrients, within and/or outside the lot(s) that are the subject of the application.

- The application does not provide sufficiently defined and measurable mitigation measures that may be applied if required as conditions to an approval in order to achieve this Performance Requirement.

Information Required for PR S.5

- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that mechanical clearing will occur only on the soils and slopes stated in the Code; or
  - Meet the Performance Requirement by providing detailed evidence that demonstrates how clearing will not result in mass movement, gully erosion, rill erosion, sheet erosion, tunnel erosion, stream bank erosion, wind erosion, or scalding and any associated loss of chemical, physical or biological fertility - including, but not limited to water holding capacity, soil structure, organic matter, soil biology, and nutrients, within and/or outside the lot(s) that are the subject of the application. Evidence provided to address this performance requirement must contain sufficiently defined and measurable mitigation measures that may be applied if required as conditions to an approval in order to achieve this Performance Requirement

Performance Requirement S.6: Salinity

Material and evidence relevant to this Performance Requirement includes:

- The Environmental Impact Statement has identified salinity issues in relation to soils and water quality.
- Clearing occurs in an interface between alluvial geological units and metamorphic geological units, which are potential discharge areas.
- Potential clearing will involve more than 1000 hectares of remnant vegetation.
- It can be reasonably expected that clearing of the site will be of a broadscale nature and therefore that any clearing may result in an increase in recharge, which can contribute to waterlogging and/or the salinisation of groundwater, surface water and soil.
- The application does not contain assessment processes consistent with the *Salinity Management Handbook, Queensland's Department of Natural Resources, 1997*, to identify potential discharge areas.

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Clearing will be greater than 5 hectares and may be greater than 50 metres wide and may occur:
  - In a discharge area.
  - Within 200 metres of a discharge area.

The application does not meet this Performance Requirement as:

- The application does not contain assessment processes consistent with the *Salinity Management Handbook, Queensland's Department of Natural Resources, 1997*, to show that waterlogging and/or the salinisation of groundwater, surface water and soil will not occur.

Information Required for PR S.6

- Please provide detailed evidence to demonstrate how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur in a discharge area or within 200 metres of a discharge area
  - Meet the Performance Requirement by providing detailed evidence that demonstrates that clearing will not cause waterlogging and/or the salinisation of groundwater, surface water and soil.

Performance Requirement S.7: Conserving remnant *endangered* regional ecosystems and *of concern* regional ecosystems

Material and evidence relevant to this Performance Requirement includes:

- Certified Regional Ecosystem v5 Map.
- Regional Vegetation Management Code for Brigalow Belt and New England Tablelands Bioregions 20 November 2006.
- Regional Ecosystems 11.11.18 and 11.3.11 are present within the subject lots.
- The vegetation offset policy is *Policy for Vegetation Management Offsets 20 November 2006*. This policy is available at:
  http://www.nrw.qld.gov.au/vegetation/legislation.html

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Clearing may occur in *endangered* and *of concern* Regional Ecosystems 11.11.18 and 11.3.11 listed in Table 4 of the Code; and
- Clearing may be greater than 10 metres wide and 0.5 hectares in the stated Regional Ecosystems

The application does not meet this Performance Requirement as:

- Clearing may not maintain the current extent of *endangered* Regional Ecosystems; and
- Clearing may not maintain the current extent of *of concern* Regional Ecosystems.

Information Required for PR S.7

- Please provide:
  - A detailed clearing footprint – this Performance Requirement cannot be accurately assessed unless the exact area of proposed clearing is known.
- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur in the endangered Regional Ecosystems 11.11.18 and 11.3.11; or
  - Meet the Performance Requirement by providing detailed evidence that demonstrates that the application will maintain the current extent of *endangered* Regional Ecosystems and *of concern* Regional Ecosystems listed in Table 4 of the Code.

Performance Requirement S.8: Essential Habitat

Material and evidence relevant to this Performance Requirement includes:

- Areas on the subject lots contain essential habitat as shown on the essential habitat map for the Little Pied Bat *(Chalinolobus picatus)*.

Essential Habitat Factors

- The essential habitat factors for *Chalinolobus picatus*
  - Include Regional Ecosystems: 11.11.4 and 11.11.15; and
  - Vegetation Community: Dry open forest and woodland (eg E. melanophloia, E. populea, E. crebra, E. molluccana, E. tereticornis, C. citriodora, C. tessellaris) in more arid areas found in riparian areas (E. camaldulensis E.microtheca,) mulga and escarpment also Brigalow forest; and
  - Altitude: Sea level to 850m.
- A desktop assessment of the RE map, spot imagery, soils and land systems information and 1:100,000 topographic map show that at least 3 of the essential habitat factors for the Little Pied Bat are present within the subject lots.

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Clearing may occur in an area shown as essential habitat on the essential habitat map.

The application does not meet this Performance Requirement as:

- Clearing may not maintain the current extent of essential habitat

Information Required for PR S.8

- Please provide:
  - A detailed clearing footprint – this Performance Requirement can not be accurately assessed unless the exact area of proposed clearing is known.
- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur in an area shown as essential habitat on the essential habitat map; or
  - Meet the Performance Requirement by providing detailed evidence that demonstrates how application will maintain the current extent of essential habitat.

PART S: Specific Requirements for clearing for significant projects: Brigalow Belt and New England Tableland Bioregions

The proposed clearing areas associated with the **Pipeline (KP01 –KP165)** are required to be assessed against the Regional Vegetation Management Code for Ongoing Clearing Purposes – Brigalow Belt and New England Tableland Bioregions ("the Code").

Performance Requirement S.1: Limits to Clearing

- A detailed clearing footprint – this Performance Requirement cannot be accurately assessed unless the exact area of proposed clearing is known. For the purpose of clearing to establish a pipeline, this may include a width of clearing on either side of an accurately mapped centre line.

Performance Requirement S.2: Wetlands

Material and evidence relevant to this Performance Requirement includes:

- The Environmental Impact Statement identifies wetland 'like' areas within the proposed clearing areas.
- It can be reasonably expected that clearing of the site will be of a broadscale nature and therefore that in wetland areas is unlikely to maintain the Regional Ecosystem structure or function.
- The 1:100,000 topographic map sheet identifies several ***wetland areas*** along the proposed pipeline alignment.
- The vegetation offset policy is *Policy for Vegetation Management Offsets 20 November 2006*. This policy is available at:
  http://www.nrw.qld.gov.au/vegetation/legislation.html

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Clearing may occur in a natural wetland and within 100 metres of a natural wetland; and

- Clearing may occur in Wetland Regional Ecosystems as stated in the Code.

The application does not meet the Performance Requirement as:

- Clearing of vegetation will not maintain the current extent of assessable vegetation associated with any natural wetland to provide –
  a) water quality by filtering sediments, nutrients and other pollutants; and
  b) aquatic habitat; and
  c) terrestrial habitat

Information Required for PR S.2

- Please provide:
  - A detailed clearing footprint – this Performance Requirement cannot be accurately assessed unless the exact area of proposed clearing is known. For the purpose of clearing to establish a pipeline, this may include a width of clearing on either side of an accurately mapped centre line.
- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur in or within 100 metres on a natural wetland and clearing will not occur within a Wetland Regional Ecosystem; or
  - Meet the Performance Requirement by providing detailed evidence that demonstrates how clearing will maintain the current extent of assessable vegetation associated with any natural wetland

Performance Requirement S.3: Watercourses

Material and evidence relevant to this Performance Requirement includes:

- The 1:100,000 topographic map sheet identifies several watercourses along the proposed pipeline alignment.
- It can be reasonably expected that clearing of the site will be of a broadscale nature and therefore that clearing in watercourses is unlikely to maintain the Regional Ecosystem structure or function.
- The vegetation offset policy is *Policy for Vegetation Management Offsets 20 November 2006*. This policy is available at:
  http://www.nrw.qld.gov.au/vegetation/legislation.html

The application does not meet the Acceptable Solutions of this Performance Requirement as:

- Clearing will occur within 50 metres from the high bank of a watercourse with a stream order of 1 and 2; and
- Clearing will occur within 100 metres from the high bank of a watercourse with a stream order of 3 and 4; and
- Clearing will occur within 200 metres from the high bank of a watercourse with a stream order of 5 or greater.

The application does not meet this Performance Requirement as:

- Clearing of vegetation will not maintain the current extent of assessable vegetation associated with any watercourse to provide –
  a) bank stability by protecting against bank erosion; and

b) water quality by filtering sediments, nutrients and other pollutants; and
c) aquatic habitat; and
d) terrestrial habitat.

Information Required for PR S.3

- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur in or within the stated distances of the Code; or
  - Meet the Performance Requirement by providing detailed evidence that demonstrates how the application will maintain the current extent of assessable vegetation associated with any watercourse

Performance Requirement S.4: Connectivity

Material and evidence relevant to this Performance Requirement includes:

- Clearing will be greater than 25 metres wide and 5 hectares in size.
- Clearing may:
  - Isolate areas of remnant vegetation.
  - Reduce the width of remnant vegetation areas to less than 200 metres.
  - Reduce the area of remnant vegetation areas to less than 50 hectares.

The application does not meet the Intended Acceptable Solution as:

- Clearing will be greater than 25 metres wide; and
- Clearing will be greater than 5 hectares

AND

- Clearing may reduce areas of contiguous remnant vegetation to less than 50 hectares; and
- Clearing may occur in areas of contiguous remnant vegetation that are less than 50 hectares; and
- Clearing may reduce the width of remnant vegetation to less than 200 metres; and
- Clearing may occur where the width of remnant vegetation is less than 200 metres; and
- Clearing may reduce the total extent of remnant vegetation to less than 30% of the area of the lot(s) that are the subject of the application; and
- Clearing may occur where the total extent of remnant vegetation is less than 30% of the area of the lot(s) that are the subject of the application.

The application does not meet this Performance Requirement as:

Areas of retained remnant vegetation may not be—

- of sufficient size and configured in a way to maintain ecosystem functioning; and
- of sufficient size and configured in a way to remain in the landscape in spite of any threatening processes; and
- located on the lot(s) that are the subject of the application to maintain connectivity to remnant vegetation on adjacent properties.

Information Required for PR S.4

- Please provide:
  - A detailed clearing footprint – this Performance Requirement cannot be accurately assessed unless the exact area of proposed clearing is known. For the purpose of clearing to establish a pipeline, this may include a width of clearing on either side of an accurately mapped centre line.
- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Intended Acceptable Solution by providing detailed evidence that clearing will not reduce areas of contiguous remnant vegetation to less than 50 hectares or 200 metres width, occur in areas of contiguous remnant vegetation that are less than 50 hectares or 200 metres, reduce the total extent of remnant vegetation to less than 30% of the area of the lot(s) that are the subject of the application or occur where the total extent of remnant vegetation is less than 30% of the area of the lot(s) that are the subject of the application; or
  - Meet the Performance Requirement by providing detailed evidence that demonstrates how the application will retain areas of remnant vegetation that are of sufficient size and configured in a way to maintain ecosystem functioning and remain in the landscape in spite of any threatening processes; and located on the lot(s) that are the subject of the application to maintain connectivity to remnant vegetation on adjacent properties.

Performance Requirement S.5: Soil Erosion

Material and evidence relevant to this Performance Requirement includes:

- The Environmental Impact Statement has identified areas of erosion along the proposed pipeline alignment.
- The Environmental Impact Statement identifies areas of the proposed pipeline alignment that have Moderate to High soil erosion potential.
- Natural Resources and Water data shows that areas along the proposed pipeline alignment have unstable and very unstable soils.
- Slopes along the proposed pipeline alignment are in excess of 8%.
- The Environmental Management Plan does not provide sufficient defined and measurable mitigation measures.

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Mechanical clearing may occur on unstable soils on slopes greater than 8% and on very unstable soils on slopes greater than 5%.

The application does not meet this Performance Requirement as:

- The application does not clearly demonstrate that clearing will not result in:
  a) mass movement, gully erosion, rill erosion, sheet erosion, tunnel erosion, stream bank erosion, wind erosion, or scalding; and
  b) any associated loss of chemical, physical or biological fertility - including, but not limited to water holding capacity, soil structure, organic matter, soil biology, and nutrients, within and/or outside the lot(s) that are the subject of the application.

- The application does not provide sufficiently defined and measurable mitigation measures that may be applied if required as conditions to an approval in order to achieve this Performance Requirement.

Information Required for PR S.5

- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that mechanical clearing will occur only on the soils and slopes stated in the Code relevant to the area; or
  - Meet the Performance Requirement by providing detailed evidence that demonstrates that clearing will not result in mass movement, gully erosion, rill erosion, sheet erosion, tunnel erosion, stream bank erosion, wind erosion, or scalding; and any associated loss of chemical, physical or biological fertility - including, but not limited to water holding capacity, soil structure, organic matter, soil biology, and nutrients, within and/or outside the lot(s) that are the subject of the application. Evidence provided to address this performance requirement must contain sufficiently defined and measurable mitigation measures that may be applied if required as conditions to an approval in order to achieve this Performance Requirement

Performance Requirement S.6: Salinity

Material and evidence relevant to this Performance Requirement includes:

- The Environmental Impact Statement identifies areas of the proposed pipeline alignment that have medium levels of salinity in the topsoil profiles.
- Clearing occurs in an interface between alluvial geological units and metamorphic geological units, which are potential discharge areas.
- Clearing of vegetation in these interfaces may result in an increase in recharge, which can contribute to waterlogging and/or the salinisation of groundwater, surface water and soil.
- The application does not contain assessment processes consistent with the *Salinity Management Handbook, Queensland's Department of Natural Resources, 1997*, to identify potential discharge areas.

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Clearing will be greater than 5 hectares and may be greater than 50 metres wide and may occur:
  - In a discharge area.
  - Within 200 metres of a discharge area.

The application does not meet this Performance Requirement as:

- The application contains no assessment process consistent with the *Salinity Management Handbook, Queensland's Department of Natural Resources, 1997*, to show that waterlogging and/or the salinisation of groundwater, surface water and soil will not occur as a result of clearing.

Information Required for PR S.6

- Please provide detailed evidence to demonstrate how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur in a discharge area or within 200 metres of a discharge area
  - Meet the Performance Requirement by providing detailed evidence that demonstrates that clearing will not cause waterlogging and/or the salinisation of groundwater, surface water and soil.

Performance Requirement S.7: Conserving remnant *endangered* regional ecosystems and *of concern* regional ecosystems

Material and evidence relevant to this Performance Requirement includes:

- Clearing may occur within the Regional Ecosystems listed in Table 4 of the Code.
- Clearing will be greater than 10 metres wide and 0.5 hectares in size
- Regional Vegetation Management Code for Brigalow Belt and New England Tablelands Bioregions 20 November 2006.
- The vegetation offset policy is *Policy for Vegetation Management Offsets 20 November 2006.* This policy is available at:
  http://www.nrw.qld.gov.au/vegetation/legislation.html

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Clearing may occur in *endangered* and *of concern* Regional Ecosystems listed in Table 4 of the Code; and
- Clearing may be greater than 10 metres wide and 0.5 hectares in the Regional Ecosystems listed in Table 4 of the Code; and

The application does not meet this Performance Requirement as:

- Clearing may not maintain the current extent of *endangered* Regional Ecosystems; and
- Clearing may not maintain the current extent of *of concern* Regional Ecosystems.

Information Required for PR S.7

- Please provide:
  - A detailed clearing footprint – this Performance Requirement cannot be accurately assessed unless the exact area of proposed clearing is known. For the purpose of clearing to establish a pipeline, this may include a width of clearing on either side of an accurately mapped centre line.
- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur within the Regional Ecosystems listed in Table 4 of the Code; or
  - Meet the Performance Requirement by providing detailed evidence that demonstrates how the application will maintain the current extent of *endangered* Regional Ecosystems and of *concern* Regional Ecosystems.

Performance Requirement S.8: Essential Habitat

Material and evidence relevant to this Performance Requirement includes:

- Clearing may occur within areas which contain essential habitat as shown on the essential habitat map.

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Clearing may occur in an area shown as essential habitat on the essential habitat map.

The application does not meet this Performance Requirement as:

- Clearing may not maintain the current extent of essential habitat.

Information Required for PR S.8

- Please provide:
  - A detailed clearing footprint – this Performance Requirement cannot be accurately assessed unless the exact area of proposed clearing is known. For the purpose of clearing to establish a pipeline, this may include a width of clearing on either side of an accurately mapped centre line.
- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur in an area shown as essential habitat on the essential habitat map; or
  - Meet the Performance Requirement by providing detailed evidence that demonstrates how the application will maintain the current extent of essential habitat.

Performance Requirement S.9: Conservation status thresholds

Material and evidence relevant to this Performance Requirement includes:

- Clearing may occur within Regional Ecosystems listed in Table 5 of the Code Regional Vegetation Management Code for Brigalow Belt and New England Tablelands Bioregions 20 November 2006.
- The vegetation offset policy is *Policy for Vegetation Management Offsets 20 November 2006*. This policy is available at:
  http://www.nrw.qld.gov.au/vegetation/legislation.html

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Clearing may occur in Regional Ecosystems listed in Table 5 of the Code; and
- Clearing may be greater than 10 metres wide and 2 hectares in the stated Regional Ecosystems

The application does not meet this Performance Requirement as:

- Clearing may not maintain the current extent of the Regional Ecosystems listed in Table 5 of the Code.

Information Required for PR S.9

- Please provide:
  - A detailed clearing footprint – this Performance Requirement cannot be accurately assessed unless the exact area of proposed clearing is known. For the purpose of clearing to establish a pipeline, this may include a width of clearing on either side of an accurately mapped centre line.
- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur within the Regional Ecosystems listed in Table 5 of the Code; or
  - Meet the Performance Requirement by providing detailed evidence on how the application will maintain the current extent of the Regional Ecosystems listed in Table 5 of the Code.

PART S: Specific Requirements for clearing for significant projects: Southeast Queensland Bioregion

The proposed clearing areas associated with the **Pipeline (KP165-KP180)** are required to be assessed against the Regional Vegetation Management Code for Ongoing Clearing Purposes –Southeast Queensland Bioregion ("the Code").

Performance Requirement S.1: Limits to Clearing

- A detailed clearing footprint – this Performance Requirement cannot be accurately assessed unless the exact area of proposed clearing is known. For the purpose of clearing to establish a pipeline, this may include a definitive total width of clearing or preferably a width of clearing on either side of a mapped centre line.

Performance Requirement S.2: Wetlands

Material and evidence relevant to this Performance Requirement includes:

- The Environmental Impact Statement identifies wetland 'like' areas within the proposed clearing areas.
- It can be reasonably expected that clearing of the site will be of a broadscale nature and therefore that any clearing in wetland areas is unlikely to maintain the Regional Ecosystem structure or function.
- The 1:100,000 topographic map sheet identifies several ***wetland areas*** along the proposed pipeline alignment.
- The vegetation offset policy is *Policy for Vegetation Management Offsets 20 November 2006.* This policy is available at:
  http://www.nrw.qld.gov.au/vegetation/legislation.html

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Clearing may occur in a natural wetland and within 100 metres of a natural wetland; and
- Clearing may occur in Wetland Regional Ecosystems as stated in the Code.

The application does not meet the Performance Requirement as:

- Clearing of vegetation will not maintain the current extent of assessable vegetation associated with any natural wetland to provide –
    a) water quality by filtering sediments, nutrients and other pollutants; and
    b) aquatic habitat; and
    c) terrestrial habitat

Information Required for PR S.2

- Please provide:
    - A detailed clearing footprint – this Performance Requirement cannot be accurately assessed unless the exact area of proposed clearing is known. For the purpose of clearing to establish a pipeline, this may include a width of clearing on either side of an accurately mapped centre line.
- Please provide detailed evidence that demonstrates how the application will:
    - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur in or within 100 metres on a natural wetland and clearing will not occur in Wetland Regional Ecosystems; or
    - Meet the Performance Requirement by providing detailed evidence that demonstrates how clearing will maintain the current extent of assessable vegetation associated with any natural wetland

Performance Requirement S.3: Watercourses

Material and evidence relevant to this Performance Requirement includes:

- The 1:100,000 topographic map sheet identifies several watercourses along the proposed pipeline alignment.
- It can be reasonably expected that clearing of the site will be of a broadscale nature and therefore that any clearing in watercourses is unlikely to maintain the RE structure or function.
- The vegetation offset policy is *Policy for Vegetation Management Offsets 20 November 2006*. This policy is available at:
    http://www.nrw.qld.gov.au/vegetation/legislation.html

The application does not meet the Acceptable Solutions of this Performance Requirement as:

- Clearing will occur within 10 metres from the high bank of a watercourse with a stream order of 1 and 2; and
- Clearing will occur within 25 metres from the high bank of a watercourse with a stream order of 3 and 4; and
- Clearing will occur within 50 metres from the high bank of a watercourse with a stream order of 5 or greater.

The application does not meet this Performance Requirement as:

- Clearing of vegetation will not maintain the current extent of assessable vegetation associated with any watercourse to provide –
    a) bank stability by protecting against bank erosion; and
    b) water quality by filtering sediments, nutrients and other pollutants; and
    c) aquatic habitat; and

d) terrestrial habitat.

Information Required for PR S.3

- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur in or within the stated distances of the Code; or
  - Meet the Performance Requirement by providing detailed evidence that demonstrates how the application will maintain the current extent of assessable vegetation associated with any watercourse

Performance Requirement S.4: Connectivity

Material and evidence relevant to this Performance Requirement includes:

- Clearing will be greater than 10 metres wide and 2 hectares in size.
- Clearing may:
  - Isolate areas of remnant vegetation.
  - Reduce the width of remnant vegetation areas to less than 200 metres.
  - Reduce the area of remnant vegetation areas to less than 50 hectares.

The application does not meet the Intended Acceptable Solution as:

- Clearing will be greater than 10 metres wide; and
- Clearing will be greater than 2 hectares

AND

- Clearing may reduce areas of contiguous remnant vegetation to less than 10 hectares; and
- Clearing may occur in areas of contiguous remnant vegetation that are less than 10 hectares; and
- Clearing may reduce the width of remnant vegetation to less than 100 metres; and
- Clearing may occur in areas of contiguous remnant vegetation that are less than 100 metres; and
- Clearing may reduce the total extent of remnant vegetation to less than 30% of the area of the lot(s) that are the subject of the application; and
- Clearing may occur where the total extent of remnant vegetation is less than 30% of the area of the lot(s) that are the subject of the application.

The application does not meet the Performance Requirement as:

Areas of retained remnant vegetation may not be—

- Of sufficient size and configured in a way to maintain ecosystem functioning; and
- Of sufficient size and configured in a way to remain in the landscape in spite of any threatening processes; and
- Located on the lot(s) that are the subject of the application to maintain connectivity to remnant vegetation on adjacent properties.

Information Required for PR S.4

- Please provide:
  - A detailed clearing footprint – this Performance Requirement cannot be accurately assessed unless the exact area of proposed clearing is known. For the purpose of clearing to establish a pipeline, this may include a width of clearing on either side of an accurately mapped centre line.
- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Intended Acceptable Solution by providing detailed evidence that clearing will not reduce areas of contiguous remnant vegetation to less than 10 hectares or 100 metres width, occur in areas of contiguous remnant vegetation that are less than 10 hectares or 100 metres width, the total extent of remnant vegetation to less than 30% of the area of the lot(s) that are the subject of the application or occur where the total extent of remnant vegetation is less than 30% of the area of the lot(s) that are the subject of the application; and
  - Meet the Performance Requirement by providing detailed evidence that demonstrates how the application will retain remnant vegetation of sufficient size and configured in a way to maintain ecosystem functioning and remain in the landscape in spite of any threatening processes; and located on the lot(s) that are the subject of the application to maintain connectivity to remnant vegetation on adjacent properties.

Performance Requirement S.5: Soil Erosion

Material and evidence relevant to this Performance Requirement includes:

- The Environmental Impact Statement has identified areas of erosion along the proposed pipeline alignment.
- The Environmental Impact Statement identifies areas of the proposed pipeline alignment that have Moderate to High soil erosion potential.
- Natural Resources and Water data shows that areas within the subject lots have unstable and very unstable soils.
- Slopes along the proposed pipeline alignment are in excess of 15%.
- The Environmental Management Plan does not provide sufficient defined and measurable mitigation measures.

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Mechanical clearing may occur on unstable soils on slopes greater than 15% and on very unstable soils on slopes greater than 10%.

The application does not meet this Performance Requirement as:

- The application does not state that the effect of clearing will not result in:
  a) mass movement, gully erosion, rill erosion, sheet erosion, tunnel erosion, stream bank erosion, wind erosion, or scalding; and
  b) any associated loss of chemical, physical or biological fertility - including, but not limited to water holding capacity, soil structure, organic matter, soil biology, and nutrients, within and/or outside the lot(s) that are the subject of the application.

- The application does not provide sufficiently defined and measurable mitigation measures that may be applied if required as conditions to an approval in order to achieve this Performance Requirement.

Information Required for PR S.5

- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that mechanical clearing will occur only on the soils and slopes stated in the Code relevant to the area; and
  - Meet the Performance Requirement by providing detailed evidence that demonstrates that clearing will not result in mass movement, gully erosion, rill erosion, sheet erosion, tunnel erosion, stream bank erosion, wind erosion, or scalding; and any associated loss of chemical, physical or biological fertility - including, but not limited to water holding capacity, soil structure, organic matter, soil biology, and nutrients, within and/or outside the lot(s) that are the subject of the application. Evidence provided to address this performance requirement must contain sufficiently defined and measurable mitigation measures that may be applied if required as conditions to an approval in order to achieve this Performance Requirement

Performance Requirement S.6: Salinity

Material and evidence relevant to this Performance Requirement includes:

- The Environmental Impact Statement identifies areas of the proposed pipeline alignment that have medium levels of salinity in the topsoil profiles.
- Clearing occurs in an interface between alluvial geological units and metamorphic geological units, which are potential discharge areas.
- Clearing of vegetation in these interfaces may result in an increase in recharge, which can contribute to waterlogging and the salinisation of groundwater, surface water and soil.
- The application does not contain assessment processes consistent with the *Salinity Management Handbook, Queensland's Department of Natural Resources, 1997*, to identify potential discharge areas.

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Clearing will be greater than 5 hectares and greater than 50 metres wide and may occur:
  - In a discharge area.
  - Within 200 metres of a discharge area.

The application does not meet this Performance Requirement as:

- The application contains no assessment process consistent with the *Salinity Management Handbook, Queensland's Department of Natural Resources, 1997*, to show that waterlogging and/or the salinisation of groundwater, surface water and soil will not occur.

Information Required for PR S.6

- Please provide detailed evidence to demonstrate how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur in a discharge area or within 200 metres of a discharge area
  - Meet the Performance Requirement by providing detailed evidence that demonstrates that clearing will not cause waterlogging and/or the salinisation of groundwater, surface water and soil.

Performance Requirement S.7: Conserving remnant *endangered* regional ecosystems and *of concern* regional ecosystems

Material and evidence relevant to this Performance Requirement includes:

- Clearing may occur within the Regional Ecosystems listed in Table 1 of the Regional Vegetation Management Code for Southeast Queensland Bioregion 20 November 2006.
- Clearing will be greater than 10 metres wide and 0.5 hectares in size
- The vegetation offset policy is *Policy for Vegetation Management Offsets 20 November 2006*. This policy is available at:

  http://www.nrw.qld.gov.au/vegetation/legislation.html

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Clearing may occur in *endangered* and *of concern* Regional Ecosystems listed in Table 1 of the Code; and
- Clearing may be greater than 10 metres wide and 0.5 hectares in the Regional Ecosystems listed in Table 1 of the Code; and
-

The application does not meet this Performance Requirement as:

- Clearing may not maintain the current extent of *endangered* Regional Ecosystems; and
- Clearing may not maintain the current extent of *of concern* Regional Ecosystems.

Information Required for PR S.7

- Please provide:
  - A detailed clearing footprint – this Performance Requirement cannot be accurately assessed unless the exact area of proposed clearing is known. For the purpose of clearing to establish a pipeline, this may include a width of clearing on either side of an accurately mapped centre line.
- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur within the Regional Ecosystems listed in Table 1 of the Code; or
  - Meet the Performance Requirement by providing detailed evidence that demonstrates how the application will maintain the current extent of *endangered* RE's and *of concern* Regional Ecosystems.

Performance Requirement S.8: Essential Habitat

Material and evidence relevant to this Performance Requirement includes:

- Clearing may occur within areas which contain essential habitat as shown on the essential habitat map.

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Clearing may occur in an area shown as essential habitat on the essential habitat map.

The application does not meet this Performance Requirement as:

- Clearing may not maintain the current extent of essential habitat.

Information Required for PR S.8

- Please provide:
  - A detailed clearing footprint – this Performance Requirement cannot be accurately assessed unless the exact area of proposed clearing is known. For the purpose of clearing to establish a pipeline, this may include a width of clearing on either side of an accurately mapped centre line.
- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur in an area shown as essential habitat on the essential habitat map; or
  - Meet the Performance Requirement by providing detailed evidence how the application will maintain the current extent of essential habitat.

Performance Requirement S.9: Conservation status thresholds

Material and evidence relevant to this Performance Requirement includes:

- Clearing may occur within Regional Ecosystems listed in Table 2 of the Regional Vegetation Management Code Southeast Queensland Bioregion 20 November 2006.
- The vegetation offset policy is *Policy for Vegetation Management Offsets 20 November 2006.* This policy is available at:
  http://www.nrw.qld.gov.au/vegetation/legislation.html

The application does not meet the Acceptable Solution of this Performance Requirement as:

- Clearing may occur in Regional Ecosystems listed in Table 2 of the Code; and
- Clearing may be greater than 10 metres wide and 2 hectares in the Regional Ecosystems listed in Table 2 of the Code

The application does not meet this Performance Requirement as:

- Clearing may not maintain the current extent of the Regional Ecosystems listed in Table 2 of the Code.

Information Required for PR S.9

- Please provide:
  - A detailed clearing footprint – this Performance Requirement cannot be accurately assessed unless the exact area of proposed clearing is known. For the purpose of clearing to establish a pipeline, this may include a width of clearing on either side of an accurately mapped centre line.
- Please provide detailed evidence that demonstrates how the application will:
  - Meet the Acceptable Solution by providing detailed evidence that clearing will not occur within the Regional Ecosystems listed in Table 2 of the Code; or
  - Meet the Performance Requirement by providing detailed evidence that demonstrates how the application will maintain the current extent of the Regional Ecosystems listed in Table 2 of the Code.

NRW recommend that you discuss this request for further information in relation to the clearing of vegetation with local staff prior to the preparation of an Addendum to the EIS. Please contact Angela Hendy, Ross Walker or Darren Moor on (07) 49398615 to arrange an appointment

---

Your Reference:	TN112197/MD40/DI
Our Reference:	NO0407MKY0002
Contact:	Rebecca Powlett
Unit:	Catchment and Regional Planning
Phone:	074938 4383

Queensland Government

Natural Resources and Mines

6 June 2007

EIS Project Manager
Gladstone Nickel Project
Major Projects
Department of Infrastructure
PO Box 15009
CITY EAST QLD 4002

Attention: Mr Mike Davison

Dear Sir

GLADSTONE NICKEL PROJECT ENVIRONMENTAL IMPACT STATEMENT - GLADSTONE

I respond to your letter of 5 April 2007 requesting comments from the Department of Natural Resources & Water (NRW) on the Environmental Impact Statement (EIS) for this project.

NRW has reviewed the EIS and considers that all natural resource management issues of interest to this Department have been considered, however, there are a number of issues which have not been adequately addressed. Considering the nature of these outstanding issues, NRW does not support the approval of the EIS at this stage.

In particular, NRW have serious concerns regarding the Residue Storage Facility and its potential impacts on water resources in the area. The EIS also presents uncertainty in the source of water for beneficiation process and slurry transport. NRW has concerns regarding the entire project, including the Marlborough Nickel Mine if seawater is not the final secure water supply for the project.

NRW understands that the proponent makes a commitment to further investigate issues associated with the Residue Storage Facility and water supply options during the detailed design stage, however, sufficient detail needs to be provided in the EIS to enable NRW to fulfil its role as an advisory body and for the Co-ordinator General to satisfactorily consider and condition the development.

PO Box 1762,
ROCKHAMPTON
Queensland 4700 Australia
Telephone 07 4938 4600
Facsimile 07 4938 4010
Website: www.nrwqld.gov.au

Another aspect of the development that requires further investigation is the potential clearing of remnant vegetation as a result of the proposed project. Again, insufficient information has been provided in the EIS to enable NRW to support the approval of the project or to request the Coordinator General impose conditions on approval.

In conclusion, the Department considers that the EIS lacks sufficient information in a number of areas relevant to the interests of NRW and this has limited the Departments ability to provide more certain advice to the Co-ordinator General.

If you require further clarification in relation to this response, please contact Ms Rebecca Powlett on telephone 4938 4383.

Yours faithfully

EP Donohue
Acting Regional Services Director
Central West Region

Fax

Queensland Government
Department of Infrastructure

To	Stewart Peters	**Fax**	3211 8688
Subject	EIS		
Reference			
From	Mike Davison		
Telephone	3405 6205	**Fax**	
E-mail	Mike.davison@infrastructure.qld.gov.au		
Date	29 June 2007	**Pages**	11(*including this page*)

Dear Stewart

I have just received this from Qld Health.

Kind regards

Mike

PO Box 15009, City East Qld 4002

Queensland Government

Queensland Health

Enquiries to: Clive Paige
Environmental Health Unit
Telephone: 07 3234 0959
Facsimile: 07 3234 1480
File Ref: 000907

Mr Mike Davison - EIS Project Manager
Gladstone Nickel Project
Major Projects
Department of Infrastructure
PO Box 15009
CITY EAST QLD 4002

Dear Mr Davison,

Thank you for the opportunity to comment on the Environmental Impact Statement (EIS) for the Gladstone Nickel Project. Queensland Health's assessment of the EIS has revealed the following:

1. **Sections 2.3.6.5 and 2.3.6.8 - *Construction Workforce Accommodation & Water Supply and Management***

It is noted from the EIS that the siting and operation of the workforce accommodation for the pipeline construction will be the subject of separate approvals. In the interests of all personnel, it is strongly recommended that the proponent ensures the onsite treatment plants and all drinking water used during the construction and operation of the project complies with the current version of the National Health and Medical Research Council's *Australian Drinking Water Quality Guidelines*. This guideline is available at www.nhmrc.gov.au/publications/_files/adwg_11_06.pdf. Other issues that need to be considered are:

GPW

i. Safe food supply
ii. Sewage treatment / disposal
iii. Waste management, and
iv. Management of mosquitos and other disease vectors

2. **Section 8.3.12 & Appendix O - *Refinery Discharge & Residue Characterisation***

The recent oil spill in the Gladstone harbour has brought to Queensland Health's attention the water and sediment quality of the harbour and its potential impact on the safety and quality of the seafood harvested in this area.

Table 1.3.3 in Appendix O of the EIS indicates that the detection limits for cadmium and mercury in the residue liquor are 0.05 mg/L and 0.005 mg/L respectively. These are higher than the ANZECC/NEPC

guideline values for cadmium and mercury of 0.01 mg/L and 0.002 mg/L respectively and so it is not possible to determine if the cadmium and mercury concentrations are less than the guideline values.

The discharge of further chemical substances into the harbour as proposed under the EIS is likely to further deteriorate the marine environment and impact adversely on the quality of local seafood. Therefore the EIS should undertake an assessment of the environmental and health impact of the discharges from the proposed Gladstone Nickel Project. WBM BM

3. *Section 8.7 & Appendix M - Air Quality*

In relation to air quality assessments undertaken by the EIS I note the following:

- Tables 1.6 and 1.7 in Appendix M of the EIS indicates that the measured and predicted concentrations of sulfur dioxide and PM_{10} in residential areas near the proposed project site will be 94 $\mu g/m^3$ for sulphur dioxide averaged over a 24 hour period and 82 $\mu g/m^3$ for PM_{10} averaged over a 24 hour period. This is in excess of the WHO guideline value of 20 $\mu g/m^3$ for sulphur dioxide averaged over a 24 hour period and 50 $\mu g/m^3$ for PM_{10} averaged over a 24 hour period. AB
- Table 1.19 in Appendix M of the EIS indicates that the incremental increase in sulphur dioxide emissions from the proposed project at Yarwun will be 29 $\mu g/m^3$ averaged over a 24 hour period. This will also exceed the WHO 24 hour sulfur dioxide guideline value of 20 $\mu g/m^3$ averaged over a 24 hour period in residential areas near the proposed project. AB

The EIS notes that regulatory air quality goals in Queensland are specified in the Environmental Protection (Air) Policy 1997 and therefore a health risk assessment is not required (refer to section 8.6 of the EIS).

The EPP (Air) standards were developed about 10 years ago and are not consistent with recent health based guidelines set by the WHO. As the WHO guidelines are based on recent research regarding air quality and health effects, it is considered that the assessment of the air quality health impacts of the project should be based on the WHO guidelines. AB

Please note that Queensland Health has undertaken the review of the EIS assessment on the assumption that the model used for predicting community exposures predicted meet approved standards.

In summary Queensland Health is very concerned regarding the existing air quality in the vicinity of the proposed project and the adverse health impacts on people living in nearby communities. It is our view that the construction of the Gladstone Nickel Project could aggravate these health impacts. It is therefore strongly recommended that a health impact assessment of the Gladstone State Development Area (GSDA) be conducted to determine if the construction of the nickel refinery is appropriate considering the existing and proposed activities in the GSDA. The impact assessment needs to consider the existing environment and the additional impacts of the Gladstone Nickel Project and other proposed projects. AB

More detailed comments on our assessment are attached for your information. If you require further information on any comments raised in this letter, please contact Clive Paige, Principal Scientific Adviser, Environmental Health Unit on (07) 3234 0959.

Yours sincerely

Sophie Dwyer
Senior Director
Environmental Health Unit
Population Health Branch
27/6/2007

Comments - Environmental Impact Statement (EIS) - Gladstone Nickel Project

1. ***Section 3.1.2- Water Supply, Potable Water***
   The Environmental Impact Statement has identified that water for potable use will be supplied by the Gladstone Area Water Board. How will Gladstone Nickel Project ensure that it will not adversely impact on or deplete the community's water supply?

MR

2. ***Section 6.3.2- Shipping, Fisherman's Landing***
   It is stated that Gladstone Pacific Nickel Ltd will be utilising the Wiggins Island terminal to import/ export products, however this terminal may not be functional when Gladstone Nickel Project begins operation. The Environmental Impact Statement identifies Fisherman's Landing terminal as an interim shipping port for the project. Matters concerning this terminal have not been addressed in the EIS and will need to be considered.

GPN

3. ***Section 8.8.3.1-Noise Criteria, EPA Criteria***
   It is noted that S4 resident will have their house and land in the Gladstone State Development Area either purchased or reclaimed while the S2 resident will be left untouched despite the increase in noise that Gladstone Nickel Project will create. Has consultation with nearby residences in relation to noise levels and their impacts at night been discussed? Has Gladstone Nickel Project Ltd spoken to residents about potentially reclaiming the nearby residents' land? Has Gladstone Nickel Project Ltd taken into consideration the social health aspect of the nearby residents if land is resumed?

GPN

Appendix M

The following information is provided to support Queensland Health's position that existing and proposed developments in the State Development Area may cause health impacts to people living in near by communities.

4. ***Section 1.5.5- Air Emissions from the Project, Emissions during upset conditions***
   Air Quality modelling scenarios outlined for potential impacts have been noted. Mitigation strategies for adverse events have not been outlined in the Environmental Impact Statement. Such strategies need to be detailed.

AB

5. The statement acknowledges that EPP (Air), NEPM-Ambient air and WHO air quality guidelines as having a role in maintaining air quality and references are made to these guidelines in the EIS. The EIS refers to both EPP and WHO guidelines as bench marks for contaminants like cadmium, nickel, mercury and hydrogen sulphide but ignores WHO guidelines for other important contaminants like sulphur dioxide, nitrogen dioxide, particulate matter and ozone.

AB

   We agree with the authors' view that WHO has interim targets for SO_2 and PM_{10}. However, we do not agree with the view of the authors that interim targets be used as references for air quality in the Gladstone region.

AB

   Interim targets are proposed by WHO as incremental steps in a progressive reduction of air pollution and are intended of use in areas where pollution is high. The interim targets are intended for countries which do not have the resources and technical capabilities to tackle high pollution and are intended only as a short term measure.

The interim targets do not apply to an advanced country like Australia which have relatively low levels of pollution compared to some less developed countries. WHO also states that mortality levels are definitely higher in those communities that attempt to comply only with WHO interim targets. AB

Australia, endowed with its economic wealth and technical means should comply with WHO guidelines rather than attempt to comply with the interim targets to minimise morbidity and mortality from pollutants in air. AB

Air quality modelling

The EIS discusses the existing air quality from the actual data collected by EPA through its monitoring sites. The Gladstone Airshed Modelling Systems (GAMS), a regional dispersion modelling tool, was used to predict background ground-level concentration. The EIS states that the predicted model has shown higher concentrations than actual monitoring data collected by EPA and as such the EIS has disregarded some data from the modelling.

We do not agree with the view that data provided by GAMS should not be relied upon for predictions. Very limited information was provided in the EIS about the verification of data from GAMS to conclude that modelling predicted higher levels of contamination. The EIS should have addressed this important aspect of the study as many assumptions in the EIS are based on GAMS. The EIS should have included a statement from EPA about the validity of data provided by GAMS. If the authors believed that the data provided by GAMS is not valid, then they should have explored the possibility of using other models for prediction. AB

Queensland Health would like more information on the limitations of GAMS and any specific situations where the predicted levels were rejected or modified and the reasons for these decisions.

Nitrogen dioxide & NO_x
Health effects (WHO)
Animal and human experimental studies indicate that NO_2 at short-term concentrations exceeding 200$\mu g/m^3$ – is a toxic gas with significant health effects.

Exposure to nitrogen dioxide (NO_2) has been shown to cause reversible effects on lung function and airways. It may also increase reactivity to natural allergens. Inhalation of NO_2 by children increases their risk of respiratory infection and may lead to poorer lung function in later life. Recent epidemiological studies have shown an association between ambient NO_2 exposure and increases in daily mortality and hospital admissions for respiratory disease. NO_2 has also been shown to potentiate the effects of exposure to other known irritants, such as ozone and respirable particles.

Guideline values
1-hour mean -200 $\mu g/m^3$ (WHO)
4-hour mean- 95 $\mu g/m^3$ (EPP)
In the EIS, only 1-hour mean data from four different sites in the Gladstone region was discussed. For a better appreciation of the current air quality, annual-mean and 24-hour mean data should have been provided. AB

The maximum1-hour NO_2 levels measured at the EPA monitoring locations at Gladstone are less than the WHO guidelines. The predicted background concentrations data indicate that the highest 1-hour mean concentration is expected to be about 111% of the WHO guideline at Clinton. Is there any intention to revise GAMS to improve its predictive ability. For example, the predicted 4- hour time weighted average concentration at Clinton is about 236% of the EPP guidelines (table 1.7).

AB

The predicted concentrations data indicate that for total oxides of nitrogen the highest discrepancy between measured and predicted concentrations occurs at the Clinton EPA monitoring location (figure 1.4.6). The predicted concentration is about 250% of the existing levels.

We need clarification about the statements made in the second paragraph of section 1.9.6. ***'The refinery project will not contribute.....Gladstone region".***

AB

We would like to know why the highest predicted incremental increase of NO_2 for a 1- hour average is compared with EPP guideline values. It is incorrect to compare incremental increases with EPP guidelines values.

The data presented in the EIS indicates that NO_2 and NO_x concentrations are higher than WHO guidelines. We are of the opinion that any new industrial activity will deteriorate the air quality in the region.

Particulate matter (PM_{10})

Health effects (WHO)

As thresholds have not been identified for PM_{10}, and as there is substantial inter-individual variability in exposure and in the response in a given exposure, WHO states that it is unlikely that any standard or guideline value will lead to complete protection for every individual against all possible adverse health effects of particulate matter. WHO advises governments and enforcements agencies that the standard-setting process should aim at achieving the lowest concentrations possible in the context of local constraints, capabilities and public health priorities.

Both the United States Environmental Protection Agency and European Commission have recently used this approach to revise their air quality standards for PM. Countries are encouraged to consider adopting an increasingly stringent set of standards, tracking progress through the monitoring of emission reductions and declining concentrations of PM. The numerical guideline and interim target values set by WHO reflect the concentrations at which increased mortality responses due to PM air pollution are expected based on current scientific findings.

The weight of evidence from numerous epidemiological studies on short term responses points clearly and consistently show an associations between concentrations of particulate matter and adverse effects on human health at low levels of exposure commonly encountered in developed countries. Some studies have suggested that long-term exposure to particulate matter is associated with reduced survival, and a reduction of life expectancy in the order of 1-2 years. Where PM_{10} levels are within the guideline values, efforts should still be made to maintain and, where possible, further reduce levels.

The major health effects from airborne particles are:

- Increased mortality

- Aggravation of existing respiratory and cardiovascular disease
- Hospital admissions and emergency department visits
- School absences
- Lost work days
- Restricted activity days

People most susceptible to the effects of particulate matter include the elderly; those with existing respiratory disease such as asthma, chronic obstructive pulmonary disease and bronchitis; those with cardiovascular disease; those with infections such as pneumonia; and children. The results of epidemiological studies have provided no evidence for the existence of a threshold value below which no adverse health effects are observed.

The WHO interim targets for PM_{10} are higher than the air quality guidelines. However WHO also states that the mortality rates associated with the interim guidelines are higher than the guidelines itself and that interim targets concentrations are meant for governments to gauge progress overtime in the process of reducing population exposures to PM.

Guideline values
24-hour mean- 50$\mu g/m^3$
Annual mean-20$\mu g/m^3$

The monitoring data indicates that background levels are very high compared to WHO guidelines. The highest 24-hour mean concentration was measured at Targinie and was about 186 % of the WHO guideline. The highest annual-mean concentration was measured at Barney Point and was about 140% of the WHO guideline.

The EIS indicates (Table 1.21) that at the EPA monitoring sites the highest 24 hour time weighted average concentration of PM_{10} due to the refinery (stage 2) with a constant background concentration will be about 197% of the WHO guideline. The highest annual time weighted average at EPA monitoring sites will be about 130% of the WHO guideline.

Studies conducted overseas indicate that an increase in mortality of around 0.5% for each 10μg increment in the daily concentration (WHO). Therefore a PM_{10} concentration of 98.3$\mu g/m^3$ (table 1.21, EPA monitoring sites) could be associated with approximately a 2.5% increase in mortality which is not acceptable in a developed country like Australia. AB

The review of data indicates that the concentrations of the particulate matter in Gladstone region is significantly higher than the international guidelines and the risks of mortality and morbidity are much higher if no mitigation measures are put in place. Any new industrial activity may have a significant negative impact on the health of the communities.

Sulphur dioxide
Health effects (WHO)
Sulphur dioxide (SO_2) is a potent respiratory irritant when inhaled. Asthmatics are particularly susceptible. SO_2 acts directly on the upper airways (nose, throat, trachea and major bronchi), producing rapid responses within minutes. It achieves maximum effect in 10 to 15 minutes, particularly in individuals with significant airway reactivity, such as asthmatics and those suffering similar bronchospastic conditions.

The symptoms of inhalation include wheezing, chest tightness, shortness of breath or coughing, which are related to reductions in ventilatory capacity, and increased specific airway resistance. A wide range of sensitivity is evident in both healthy individuals and more susceptible people, such as asthmatics, the latter being the most sensitive to irritants.

Guideline values
10-minute mean -500µg/m^3
1-hour mean- 350µg/m^3
24-hour mean - 20µg/m^3

There are no WHO guideline values for 1-hour mean concentration. In the absence of WHO guideline values for 1-hour mean, a guideline value of 350µg/m^3 has been used as a bench mark as it is used by New Zealand and other developed countries.

AB

The monitoring data indicates that the highest 1-hour mean concentration was measured at Clinton, (table 1 6) and was about 108% of the New Zealand air quality guideline.

The highest modelled ground level concentrations due to the refinery (stage 2) and background industrial sources are as follows (table 1.18):

10- minute mean (Clinton)- 124% of the WHO guideline;
1-hour mean (Clinton)-123% of the New Zealand guideline;
24hour-mean (Clinton)-485% of the WHO guideline.

The concentrations of SO_2 in many areas are significantly higher than international standards.
The incremental increases (table 1.9) based on modelled ground level concentrations of SO_2 due to the refinery (stage 2) in isolation indicate significant increments. The significance of these increases is not discussed in the EIS. The highest increments are as follows:
10-minute mean – 213µg/m^3 (EPA monitoring sites)
1-hour mean-149µg/m^3 (EPA monitoring sites)
24hour mean-34µg/m^3 (EPA monitoring sites)

We would like more information on the significance of the above data.

The review of data indicates that the concentrations of the sulphur dioxide in Gladstone region is significantly higher than the international guidelines and the risks of mortality and morbidity are much higher if no mitigation measures are put in place. Any new industrial activity may have a significant negative impact on the health of the communities.

Ozone
Health effects (WHO)
The health effects associated with exposure to ozone can be summarised as follows:

- increase in daily mortality, respiratory and cardiovascular disease
- increase in hospital admissions and emergency room visits
- increase in respiratory and cardiovascular disease
- decrease in lung function
- increase in symptoms of respiratory illness such as cough, phlegm and wheeze
- increase in bronchodilator usage

Recently, ozone has been found to cause asthma, particularly in young children exercising in areas with higher ozone levels.

Guideline values
8-hour-mean -100µg/m^3 (WHO)

Recent epidemiological studies demonstrate that there is no apparent threshold for ozone below which adverse health effects will not be observed.

Ozone, an important pollutant, is not discussed in any detail in the EIS. As Nitrogen dioxide is an important pollutant of the refinery, we request more data on the predicted 1-hour mean and 8-hour mean to make any further comments. The 1-hour mean data and the 4-hour mean monitoring data provided for Barney Point is inadequate to make any comments. AB

Clarification
We need clarification about the statements made in 1.9.1 Air Quality Impact from Project page 34 last paragraph "To assist in the assessment.....EPA monitoring data". AB

The statements made in the above paragraph appear to be in contradiction to other statements made in section 1.9.1 which states that the 10 minute, 1hour, 24-hour SO_2 and 1-hour NO_2 concentrations are predicted to exceed the EPP (Air) guidelines in some non-residential locations due to current industrial sources.

Conclusions
- Increased pollutants in the air are associated with increased morbidity and mortality.
- The review of the data in the EIS indicates that the predicted contaminants in the air are significantly higher than WHO and other international air quality guidelines.
- Any new industrial activity will deteriorate the air quality in the Gladstone region.
- A health impact assessment must be carried out before the approval of any industries in the Gladstone region
- The current EPA air quality guidelines are inadequate to protect public health.

7. Marine Modelling (Appendix I)

Queensland Health has concerns that the discharge of liquid wastes into the marine environment may result in the contamination of seafood caught in the Gladstone area by recreational and commercial fishermen. The following information is provided to support Queensland Health's position regarding health impacts due to the consumption of seafood caught in the Gladstone area.

The EIS states that a tracer has been used for modelling. We would like clarification on the following aspects of the modelling: BM WBM

1. The name of the tracer and its specific gravity.
2. The limitations of the tracer in determining the dispersion of various chemicals including heavy metals. 3.9.6
3. The EIS states that Near Field Model (CORMIX modelling package) are correct to ± 50% and all results should be interpreted accordingly. However, the EIS does not appear to take this limitation into consideration in the discussion on (Section 9), Environmental Effects of refinery.

4. Cadmium is one of the pollutants in the discharge liquid. However, the likely concentration of Cadmium in the discharge liquid is not mentioned in the EIS and also Cadmium is not included in the modelling. We would like to know the reasons for not including Cadmium in the modelling.

Marine Sediment Data (Volume 1, Section-08)

Data on marine sediment data is presented in Table 8.3.7. However, there was no discussion in the EIS on the relevance of the data. Comparison of the data with the Ontario Ministry of Environment indicates that the levels of Lead, Nickel, Mercury and Chromium in some sites is higher than the lowest concentrations at which toxic effects on the marine environment become apparent.

CSIRO

As the discharge liquid from the refinery contains many chemicals in significant concentrations, the impact of the discharge on the marine environment should be discussed in the EIS. The EIS should discuss in detail the likely increase of the pollutant chemicals in the sediment and its effect on the marine environment for the lifetime of the refinery.

Fishing (Volume 1, Section-08)

The importance of commercial and recreational fishing in Port Curtis is discussed in 8.3.8. However, the impact of the refinery and the discharge of the contaminants to the marine environment on the fishing activities is not discussed in the EIS.

BM

Water Quality Objectives (WQO) (Volume 1, Section-08)

The Water Quality Objectives seem to have been derived from various guidelines across the world. The EIS should discuss the criteria for adopting these objectives and whether the Water Quality Objectives have been approved by a regulatory agency like EPA.

BM

The water quality objectives (trigger levels) for some chemicals in the EIS are much higher as the lower levels of protection were chosen by the authors. As nickel and other pollutants are bio-accumulative, the protection levels should have been 99%.

Examples

Nickel

The EIS chose a level of 70µg/L as a trigger level for a 95% protection. However a 95% protection level does not give sufficient margin of safety from acute toxicity for many marine species. Hence ANZECC recommends a 99% protection level (7µg/L) for slightly-moderately disturbed marine systems.

Aluminium

The Water Quality Objective of 127µg/L for Aluminium is too high. The trigger value for marine water in ANZECC guidelines is 0.5µg/L.

Predicted Pollutant Concentrations at 1000m (Volume 1, Section-08)

In the EIS, the predicted pollutant concentrations at 1000ms were discussed. It is unclear why a distance of 1000m was chosen for prediction. As the specific gravity of many contaminants is much higher than the receiving environment, the contaminants, especially, heavy metals are likely to settle down much closer to the diffuser. The modelling should have been used to predict concentrations at every 250m (arbitrary) from the diffuser and it should also be used to predict the likely rise in sediment concentration of the chemicals. These predictions should be used to ascertain the likely affects of the pollutants on the marine environment.

WBM

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Mr Bailey

16 May 2007

EIS Project Manager
Gladstone Nickel Project
Major Projects
Department of Infrastructure
PO Box 15009
CITY EAST QLD 4002

Dear Sir

GLADSTONE PACIFIC NICKEL – ENVIRONMENTAL IMPACT STATEMENT

Detailed below is the Central Queensland Port Authority's response to the Gladstone Nickel Project Environmental Impact Statement.

As an overarching comment, the CQPA has on every EIS submitted for comment drawn the attention of the State Government to the fact of waste discharge into the waters of the Port of Gladstone. With the EIS for Gladstone Pacific Nickel, extensive research has been undertaken as to possible effect both of sea water quality and potential for the materials to remain in the harbour environs.

CQPA again draws the attention of the State to the possible accumulative effects of a number of industries discharging material into Port waters, which in themselves can be demonstrated to be under International Standards for disposal but when combined with other discharges into Port waters, may have a deleterious effect on the Port environs.

This has the potential to limit severely, or even cause the practice of sea dumping of dredge material to cease entirely. CQPA remains very cognisant of the ever changing standards of Environmental controls and must not find itself in the position of not being able to undertake major capital dredging projects because of an inability to dispose of dredge material at sea due to elevated chemical/minerals levels in the dredge spoil.

This monitoring of all waste discharges into the waters of Port Curtis should be a State function, similar to the monitoring of the Air Shed capacity of the area of Gladstone /Calliope.

SPECIFIC COMMENTS ON THE EIS

Executive Summary

Proposed Project (ES-3) – Reference is made in the third paragraph of '*.... Imported through the Wiggins Island Wharfs (WIW) to be developed at Wiggins Island by the Central Queensland Ports Authority as part of its proposed Wiggins Island Coal Terminal. If the WIW does not proceed or is delayed, nickel ore can be imported through the existing port facilities at Fisherman's Landing.*'

This statement would tend to imply that the construction of the wharves at Wiggins Island for the use of GPN is contingent on CQPA developing the Wiggins Island Coal Terminal.

CQPA has sought approval under its EIS process for the construction of Berths 5 and 6 at Wiggins Island for the purposes of handling bulk products in cape sized vessels.

Subject to the granting of approval under the Wiggins Island Coal Terminal EIS, the two berths being used for the import of nickel ore and sulphur can be constructed irrespective of whether the coal terminal proceeds or not.

It should be further noted that the '*existing*' port facilities at Fisherman's Landing, are in fact '*proposed*' only.

The potential to import nickel ore and sulphur through Fisherman's Landing No. 3 is limited and subject to further investigation.

Land Use (ES-12) – CQPA has not used the site as a source of fill.

Section 1.4 Proposed Project

Comments as reflected in Executive Summary

Section 2.2.1.4 Wiggins Island

As indicated previously, the development of the wharf for GPN is not conditional on CQPA proceeding with the development of WICT. GNP will be allocated Berth No. 5 for the handling of bulk products.

Section 2.2.3 Pipelines / Section 2.3.6.1 Construction Procedures

From the outline given in this section for Stage 1, four pipes will be required in the corridor from the GPN site to the RSF. These pipes will carry slurry into the site, seawater to Marlborough, residue to the RSF and return of barren liquor for discharge into Port Curtis.

Given the area and the cross section of the Materials Transportation Corridor, the EIS should provide details of how these four pipes for Stage 1 can be accommodated in the MTC and how six pipes for Stage 2 can be accommodated.

Section 2.7.2.2 Ammonium Sulphate Storage Shed

As indicated previously, wharf facilities at Fisherman's Landing No. 3 Wharf are NOT existing and are 'proposed only' at this stage.

Section 3.1.3 Seawater

(3-3) The pipeline route for seawater is not shown on Figure 3.1.2.

Information is sought on the location of the seawater pumps and associated intake structures at Wiggins Island.

If, as is pointed out in comments elsewhere, the wharves at Wiggins Island have not been constructed, what arrangements are to be made for saltwater pumps?

Section 4.8 Operational Air Emissions

No reference is made to dust emissions associated with the handling and storage of nickel ore.

Section 5.4.2 Imported Ore

The construction of wharf facilities for the nickel and sulphur import at Wiggins Island is not conditional on the construction of the coal terminal.

Section 5.14 Modularisation

It appears from other Sections in the EIS, that the provision of Pre-Assembled Modules (PAM's) is a critical aspect of the Project. The EIS should therefore contain all details regarding the import of PAM's from size of vessels envisaged, draft of those vessels, wharf facilities required to handle the PAM's, dredging works associated with the handling of those vessels and the route proposed from those wharf facilities to Plant Site.

Section 6.2.6.7 Transportation Gladstone – Mt Larcom Hanson Road/Landing Road

Given the basic detail of the Plant Operations, it could be conceivable that this intersection "operates well within prescribed limits". There are however a number of factors that have not been included in that assessment.

- The transportation of Amsul from Plant site to the proposed Fisherman's Landing No 3 Berth.
- The effect of initial importation of both nickel ore and sulphur through the proposed F/L No 3 Berth to Plant Site.
- The effect of the initial movement of Sulphuric Acid from a proposed Terminal in the Fisherman's Landing Development Area to Plant Site.

Section 8.2.3.1 Stormwater Management System

What points of discharge are being considered for the stockpile area and refinery site? Is discharge into the Calliope River or Anabranch?

Section 8.3.12.2 Discharge Arrangement

Further information is required on the location of the diffusers.

The Marina and Spinnaker Park in particular were provided as a buffer between the community and industry (RGTCT). Spinnaker Park was provided as an area of parkland that the public could use to access the waters of Port Curtis with a netted beach being provided for use by the public.

The downstream diffuser is located in close proximity to the beached area within the parklands of Gladstone Marina. Are there potential sediments that may impact on the quality of the sandy beach?

The marina foreshores are regularly frequented by recreational fishermen. Are there any restriction imposed by the placement of the pipeline?

The proposed pipeline is 1.7m diameter. What arrangements are to be made for the pipeline along the foreshore of the marina?

The eductors are located at the end of a horizontal T section. What are the dimensions of the T section? Are there risks associated with snagging the T section?

The Authority has planned the area adjacent to the diffusers for stage 2 for the construction of a Tug Base. This concept requires the construction of a bund wall and dredged berthing basin for the tugs.

Account needs to be made of this future development in the design of the pipeline route and detail. The protrusion of the diffusers of at least 1.7m above the seabed may introduce some navigational issues associated with the movement of tugs.

Consideration should be given to the construction of the two eductors at the western end of the line in the first stage thus leaving the options open for development in stage 2.

Section 8.3.13 Water Quality Impacts of Refinery Discharge

The report discusses the near-field effects of the discharge at a location 1,000m downstream of the diffusers.

Of concern to the Authority is the nature of the discharge/deposition that will occur in the berth pockets of RGTCT. By nature of the dredging of the berths there is a potential sediment trap created. This is evidenced by the accumulation of sediments within the berth pockets which may occur either as a consequence sediment seabed movement along the current alignment or from sloughing off the dredged batter, or from the reduced velocities resulting in higher settling rates.

The proximity of the berth pockets is well within the near-field modelling zone with the closest discharge point being within tens of metres of the berth pocket.

The Authority requires understanding if there exists any risk of contamination of the sediments within the berths that may impact on the ability to dispose of dredged material either onto shore or at sea.

Section 8.3.14 Pipeline Crossing of Calliope River

This section describes the pipeline placement across the river as being a 1.7m diameter pipeline in a 2.0m excavated trench. It is further stated that the pipeline is covered with selected hard fill to prevent the re-exposure by tidal currents and floods.

It is noted that material excavated from the pipeline crossing will be placed ashore in the areas designated for dredged material disposal from the Wiggins Island berths. What is the nature of the material and are there contaminants that may impact on the onshore disposal or method of handling?

With a barge mounted excavator to be used for trenching of the pipeline route, what method of transfer to the onshore disposal areas will be used?

Will silt curtains be deployed around the excavator? It should be noted that the pipeline route is upstream of a significant gutter between Golding Point and Wiggins Island and that plumes entering this channel discharge directly onto seagrass beds.

With a cover of less than 300mm being provided by this design, what is the nature of the material such that it will resist movement on the riverbed and provide protection from potential uplift? Potential buoyancy issues exist with a minimal cover being applied to the pipeline.

How will the selected hard fill be placed over the pipeline?

It should be noted that limitations on access in and out of the Calliope River are controlled by the Regional Harbour Master and not CQPA (8-58).

Consideration needs to be given to potential future river access through the dredging of the river. A minimum depth below low water needs to be provided for at least some sections of the pipeline crossing the river.

Section 8.3.15 Potential Marine Impacts from Materials Handling

Sulphur – It is interesting to note that *'.... Spills to water or soil will be prevented and quickly cleaned up as bacterial action can eventually oxidise the prill/pastille to produce acidic sulphate ions and hydrogen sulphide, ...'.*

Further understanding is required as to how spills to the marine environment will be cleaned up.

With a fendering system and wharf construction similar to RGTCT and WICT, the main deck has approximately a four metre gap to the vessel side with the hold coaming being a further distance again.

Some form of apron needs to be provided to cover the interface of vessel and wharf.

Nickel Ore – Similar comments to that for sulphur apply to the reliance of the grab design to prevent spillage.

Nickel ore has been known to vary within the vessel hold from dust at the surface to mud at the bottom.

There are significant issues with the hang up of ore in the grab due to its cohesive nature. Unless the grab is design to be closed between the deck hopper and the vessel hold, there is every likelihood that spillage will occur.

It is noted that *'.... Nickel ore will be unloaded using a purpose-built wharf crane with specialised grabs and operations similar to those used in Townsville ....'* and *'The grabs will be purpose-designed to prevent spillage between the ships coaming and the wharf.'* (8-59). However the same section continues to identify the concerns relating spillage at the same site.

Comment is made that *'.... GNP will be offloaded in a more stable wharf-based environment rather than an off-shore single point mooring unloading facility ....'.* It is the Authorities understanding the nickel in Townsville is unloaded at both the outer and inner harbour with vessels moored against wharves.

Again it must be emphasised that the wharf facilities that are understood to be in use in Townsville are focused against panamax vessels and not cape sized vessels as proposed for Gladstone. As the fender system and wharf configuration are different and the distance between deck and vessel is significantly greater at 4.0m, some provision must be made to prevent spillage through this gap.

In line with current EPA Standards, it would be envisaged that all material spills on the wharf will be transported ashore for disposal.

Section 8.3.16.4 Ships Garbage

CQPA provides a ship waste collection service under a certified agreement with AQIS.

Section 8.7.7.2 Materials Handling Emissions

As previously stated, the moisture content of ore removed from the vessels' holds appears to vary significantly. Inspections at other facilities indicate that this varies from dust to mud.

Options must be available for the addition of water to the conveyor stream at the source (hopper) and each transfer point.

Advice is provided that ore and sulphur will be handled at the stockpile by front end loaders (2-25). Dust generation from the traversing of end loaders around the stockpile base is a major source of dust generation through the physical movement of the loaders and the potential crushing of the ore.

Additional details are sought on the method of dust control (monitors, water trucks, etc).

Section 8.8 Noise

A significant source of noise to be identified will be the operation of conveyors and shiploaders at the wharf.

The conveying system by nature of its length has a cumulative affect. Similarly warning sirens and signals associated with shiploader movement and conveyor start up are strong noise source even though for only a short time.

It is not apparent from the work undertaken by ASK Consulting Engineers (Appendix N) that the noise sources have been accounted for these systems.

It is understood that the nickel ore will not be screened at the loading port with the result that the ore unloaded will be variable in size and as such may require primary crushing at the ship unloader. If this is to be the operation, the noise impacts for the crusher need to be considered.

Section 10.7.2.1 Housing Strategy – Strategy Rationale

The EIS should outline in detail how the accommodation situation will be handled. The Strategies may well be the basis for addressing the situation, however more detail is required.

Section 10.7.3.3 Modularisation

As mentioned previously in our Responses, if the PAM's concept is of such criticality to the overall Project, then that concept should be addressed in detail so that the actual impact of construction workforce numbers and associated accommodation impacts can be evaluated.

The comment that *'Adverse impacts from more than one project being constructed simultaneously would be mitigated if all projects utilised the modular approach'* needs to be verified.

General Issues

Nickel Ore Import Fisherman's Landing - Comment has been made throughout the EIS on the potential for an initial start up for nickel ore import through Fisherman's Landing.

In the event that this option is pursued the impacts will need to be addressed?

What is the method of transport from Fisherman's Landing to the plant site? If conveyor, what is the route? If truck, what are the impacts on the road system? (Mt Larcom/Hanson Road, RTA Roundabout).

Nickel Ore Rail Receival - Indications have been made that nickel ore may be transferred from Marlborough to Gladstone on rail.

The method of handling at the receival point is for a tippler system to be deployed. The noise and dust implications of this receival facility should be evaluated.

Kind regards

LEO M ZUSSINO
CHIEF EXECUTIVE OFFICER

7 49758158

IN REPLY PLEASE QUOTE OUR REFERENCE

"Think Safety - It's No Accident!"

Mr Schuler:JAB:LN13554; Project

YOUR REFERENCE

TN112197/MD40/D1

28 May 2007

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PLEASE ADDRESS ALL CORRESPONDENCE TO THE CHIEF EXECUTIVE OFFICER

EIS Project Manager
Gladstone Nickel Project
Major Projects
Department of Infrastructure
PO Box 15009
CITY EAST QLD 4002

Attention: Mr Mike Davison

Dear Sir,

RE: GLADSTONE NICKEL PROJECT
ENVIRONMENTAL IMPACT STATEMENT

In response to your letter of 5 April 2007 regarding the call for submissions on the Environmental Impact Statement (EIS) for the Gladstone Nickel Project (GNP), attached please find the submission from Calliope Shire Council.

This Council, in conjunction with Gladstone City Council, contracted GHD Pty Ltd to prepare a report on the EIS document, to assist the two Council's in responding to your request. The GHD report forms the basis of the submissions from both Councils, however there is variation to reflect the response of the Council on individual issues.

Council also requests that any responses within the attached document pertaining to another agencies infrastructure (ie declared main roads) be read in conjunction with any comments made by that agency.

Council has appreciated the opportunity for input into the EIS process, and would be pleased to discuss any issues raised in its submission with the Department or the proponent.

Yours faithfully,

GRAEME KANOFSKI
CHIEF EXECUTIVE OFFICER

Enclosure: CSC submission

CALLIOPE SHIRE COUNCIL

Community, Environment & Industry in Partnership

CALLIOPE SHIRE COUNCIL SUBMISSION

Based on the Calliope Shire Council and Gladstone City Council

Joint Review of Gladstone Pacific Nickel EIS Report

May 2007

Contents

1. Preliminary

Calliope Shire Council and Gladstone City Council (Councils) have contracted GHD to assist with a review of the Gladstone Pacific Nickel Environmental Impact Statement (GPN EIS). Provided in this report are comments on the EIS from Calliope Shire Council.

These comments have been collated based on discussions between Gladstone City Council and Calliope Shire Council staff and GHD staff and a review of the EIS document. The focus of the report is on issues that relate to Local Government Authorities, as State Government Agencies will address other areas, such as some of the environmental impacts.

2. Introduction

2.1 Context

This submission has been prepared as a joint approach between Gladstone City Council and Calliope Shire Council and whilst there may be some areas of the response document that vary slightly in relation to specific GCC or CSC issues, the majority of the document and intent is applicable to both Council's separate submissions.

2.2 General Comments

The incremental impacts of these types of large industrial projects on the communities of Calliope and Gladstone are difficult to document at the EIS stage, and therefore not well understood. While an individual project may not result in a requirement for additional infrastructure or services, the cumulative impact of these projects can result in a reduction in services or amenity in the local area. In particular issues such as health, education, safety and community services are not readily assessable on a project-by-project basis. The cost of these additional services or infrastructure is a direct result of the development across the local area.

This situation clearly highlights the need for a high level model for both infrastructure and social services that can predict the cumulative impacts of significant projects. This approach would ensure that each project contributes for their impacts only but also that funding is available for essential infrastructure and services when required.

This initiative should be considered as a part of the wider State Government planning processes and funding provided accordingly.

2.3 Regional Planning

The presence of the GSDA and corridors such as the infrastructure corridor from the Stanwell industrial estate to Gladstone provides an opportunity to remove major infrastructure from the Gladstone and Calliope residential areas and facilitates a coordinated approach to the development of infrastructure such as pipelines, powerlines and rail corridors. Councils wish to see that these regional planning initiatives are utilised by all large industrial projects.

2.4 EIS Review by Referral Agencies

Particularly for larger sized projects such as this current proposal, the review required by both Council's is an extensive one that calls upon many disciplines, as the impacts on both local authorities are considerable and widespread. For both Councils to effectively undertake this review, it has been necessary in recent times to utilise the services of external consultants to assist in this review process. Needless to say there are significant costs associated with utilising external consultants and both Council's are of the view that as a referral agency for such applications, there should be an ability to charge in order to recoup some or all of these costs.

3. Traffic, Transport and Infrastructure

3.1 Meeting the TOR

The EIS does not fully address the TOR in regard to the following issues:

- Transport of plant and materials at the decommissioning stage of the project
- Anticipated times at which each type of transport movements may occur
- The effect of rail freight demand on the Rockhampton to Gladstone line and rail infrastructure at the Port of Gladstone.
- Haulage routes for oversize indivisible loads
- The need and extent of port facilities required for the project
- The TOR requires 'The description shall also include brief information of other infrastructure and industrial projects in the vicinity of the projects that may impinge on or be impacted by the project on account of cumulative effects.' This section has not been considered and needs to be further considered as discussed above.

3.2 Specific Comments

The section numbers presented here refer to sections of the GPN EIS.

2.3.4.3 Sewage and 3.4 Sewerage

While the Yarwun Sewage Treatment Plant has the additional capacity to accept sewage from the GPN project, the plant is currently experiencing operational problems as a result of an imbalance in the solids to liquids ratio in the input stream. The liquids are elevated, which results in difficulties in keeping the bacteria in the treatment process alive. Council requests that a breakdown of the waste stream be provided, and that the proponent agree to work with Council to address any issues which may arise.

2.3.5.4 Transportation

Council is of the opinion that access to the RSF should be provided through the GSDA internal road network and not direct to the Bruce Highway. The EIS should be amended to include a review of this alternate arrangement so that traffic safety impacts on the Bruce Highway are minimised.

2.3.6.3 Construction Depots and Temporary Facilities

The impact of traffic to construction depots and temporary facilities on Local Government controlled roads is not addressed in detail, as the location for these facilities is yet to be determined. While this is understood for the current stage of the project the possible impact on Local Government controlled roads and local residents is potentially significant. The EIS should therefore be amended such that the proponent is required to prepare a Road Use Management Plan that considers issues such as the standard of the road network, access conditions, hours of operation, dust control, safety etc related to these facilities.

- This plan should be approved by the relevant Local Government prior to any access or construction work on the pipeline.

The proponent should also prepare a Road Impact Assessment for Local Government controlled roads to ensure that traffic generated by the proposed construction depots and temporary facilities is investigated and the traffic impacts resulting from these facilities mitigated to the satisfaction of the relevant Local Government.

- This plan should be approved by the relevant Local Government prior to any access or construction work on the pipeline.

Both the Road Use Management Plan and the Road Impact Assessment should conform to the current requirements of the Department of Main Roads.

A similar action has been recommended for Section 6.2.3.3 Pipeline Construction Traffic.

2.3.6.5 Construction Workforce Accommodation

Refer to the comments provided in Section 6.2.3.3 Pipeline Construction Traffic. Other comments from a social and town planning perspective on the construction workforce for the refinery are provided in Section 4 of this report.

2.3.6.9 Transportation

The conditions applicable to the use of Local Government assets are addressed in detail in the response to Section 6 Transportation. The statement that truck movements will take place during daylight hours 'as far as practical' is however not acceptable. The timing of truck movements must be addressed as a part of the Road Use Management Plan for the project. Comments on Section 6.2.3.3 provides additional detail on this plan.

2.6 Project Inputs

The inputs required for the project will have an impact on the transport network. The proponent should confirm that these inputs have been included as a part of the traffic impact assessment.

2.6.4 Limestone

It is stated that the project will source limestone from East End or Taragoola mines. It is proposed that this material be conveyed to the site by a slurry pipeline. The potential location of these pipelines is not clear and needs to be assessed in regard to its impact on Local Government infrastructure (Council acknowledges that a moth balled pipeline exists from the East End mine to Fisherman's Landing). The EIS should be amended so that the location of the pipeline is investigated in greater detail and the assessment of the location made available for public comment. The impact of any pipeline on local infrastructure and residents should also be identified and mitigation measures proposed for consideration by Local Government.

2.2.3 Pipelines and 2.5.6 Pipelines

The project will source nickel ore from Central Queensland mining leases owned by Marlborough Nickel Pty Ltd. It is proposed that this ore will be slurried and delivered by pipeline to the Gladstone refinery. The location of the proposed pipeline with respect to the future multiple services corridor established by the Coordinator General is not clear. This should be presented in a modified Figure 2.2.4. While Councils acknowledge that GPN had progressed the identification of their own pipeline corridor prior to the declaration of the proposed multipurpose corridor from the Stanwell industrial estate to Gladstone by the Coordinator General, Council would encourage the placement of all or part of the pipeline within this

corridor if the corridor is officially declared within a suitable timeframe. The impact of this inclusion on other existing or proposed uses within the corridor also needs to be assessed.

While the project does not currently prefer the use of rail transport for the cartage of nickel ore, the use of this transport mode has the potential for significant impacts upon local residents and infrastructure. If the proposal for a slurry pipeline does not proceed then the EIS should consider the impact of increased rail transport through Calliope Shire on the safety and amenity of local residents.

The EIS should include a statement that, should the slurry pipeline not be the preferred option for the haulage of nickel ore, a fresh consultation process will be initiated with Local Government and the future rail system subject to a separate environmental impact statement.

6.2.2 Existing Traffic

The EIS uses limited manual traffic counts undertaken in 2006. These traffic counts were updated based on traffic data from 2003 and 2004. This approach is not accepted as traffic in the region has grown significantly over the past years and consequently the adjusted traffic volumes are unlikely to represent the current traffic volumes on the road network. In addition the growth rates used in the analysis should consider the level of traffic increase between 2003/04 and 2007 and use this information to predict future traffic volumes. An additional analysis of traffic volumes should be undertaken to ensure the predictions are representative of current circumstances.

6.2.3.1 Refinery Construction Traffic

An estimate of construction traffic during stages 1 and 2 has been based upon 67% of staff travelling to the site on 30 seater buses and the remainder travelling to the site in private vehicles with two people per private vehicle. The EIS notes that previous construction projects in Gladstone had a different ratio between buses and private vehicles. An example is provided in which the Comalco site had around 50% of staff travelling in buses and the remainder in private vehicles with an average occupancy of 1.8 persons per vehicle. The application of staff travelling patterns quoted for the Comalco site would result in significantly higher traffic volumes on the road network and may increase the requirement for the upgrading of key intersections or road segments.

Additional assessment of impacts based on amended usage patterns is required to accurately test the impact on the network. This assessment should consider two additional scenarios as follows:

* 50% Bus, 50% passenger vehicles, Occupancy 1.8 persons per vehicle
* 37% Bus, 63% passenger vehicles, Occupancy 1.5 persons per vehicle

This approach will test the sensitivity of the assessment and allow the potential impact on intersections to be considered in additional detail. It is critical that this assessment be conducted as many of the intersections that are listed as performing adequately during the construction and operation of the project have degrees of saturation on individual intersection approaches that are nearing the maximum acceptable levels and small increases in traffic may result in the need for remedial works.

Recent major construction projects in Gladstone have resulted in localised traffic problems due tho the high number of staff leaving the site at the one time. This is particularly evident where large numbers of buses are used to transport staff to and from the site. The EIS should consider the staggering of start and finish times to minimise these types of traffic impacts.

6.2.3.3 Pipeline Construction Traffic

The impact of pipeline construction traffic on Local Government controlled roads is not addressed in detail, as the location for the pipeline is yet to be determined. While this is understood for the current stage of the project the possible impact on Local Government controlled roads and local residents is potentially significant. The EIS should be amended such that the proponent is required to prepare a Road Use Management Plan that considers issues such as the standard of the road network, access conditions, hours of operation, dust control, safety etc.

* This plan should be approved by the relevant Local Government prior to any access or construction work on the pipeline.

The proponent should also prepare a Road Impact Assessment for Local Government controlled roads to ensure that traffic generated by the proposed workers village's is investigated and the traffic impacts resulting from these villages mitigated to the satisfaction of the relevant Local Government.

* This plan should be approved by the relevant Local Government prior to any access or construction work on the pipeline.

Both the Road Use Management Plan and the Road Impact Assessment should conform to the current requirements of the Department of Main Roads.

A similar action has been recommended for Section 2.3.6.3 Construction Depots and Temporary Facilities

6.2.5.3 Traffic Volumes – State Controlled Traffic Network

Daily two-way traffic volumes have been used to assess the capacity of the state controlled road network. In general this approach is acceptable however the high volumes of traffic expected during the peak hours may result in some capacity limitations during these times. The mid block capacity of the road network should therefore be tested to determine the level of performance in the peak hour and the impact of additional traffic (particularly the during the construction phase) on this performance.

6.2.5.4 Traffic Volumes – Council Controlled Network

A mentioned is Section 2 of this report, incremental impacts on services/infrastructure as a result of large industrial projects does lead to a reduction of services or amenity in the local area. This is equally true for the Council controlled road network. In terms of Calliope Shire, roads such as Reid Road, Landing Road and Calliope River Road will all be impacted through the using up of capacity and potentially bringing forward maintenance costs. Council therefore believes that proponents of projects who can show that the incremental impacts of their project do not require roads to be upgraded should nonetheless be required to contribute, on a fair and equitable basis, for the capacity and maintenance components mentioned above. Council requests that this be a requirement of any approval given. It is noted that on page ES-7 of the EIS, GPNL acknowledge that they will enter into an infrastructure agreement to allocate responsibilities for works within the road network, and Council welcomes this commitment.

The traffic volumes provided on the Local Government controlled road network do not include the potential increases on Hansen/Glenlyon Road heading towards Philip Street. Possible increases in traffic utilising Phillip Street also needs to be considered and addressed if required. It is preferable that these impacts be assessed through a calibrated traffic model rather than a manual distribution of generated traffic. The Department of Main Roads 'FINS' model is suitable for this assessment.

6.2.6.2 Hanson Road/Reid Road

The construction of a roundabout at this intersection will result in a decrease in the travel speed for vehicles travelling along Hanson Road. Alternate intersection arrangements should be considered such that the existing speed environment is maintained.

In addition the future access to Wiggins Island should be considered in conjunction with this intersection to assess the performance of the overall road segment. The layouts for the two intersections should be tested to ensure that the future design of the two intersections is capable of meeting traffic demands and conforms with design standards. In particular the separation between the two intersections and between any turning lanes or tapers should be investigated and compared to current design standards.

Given the proximity of the two intersections it may be necessary to model the performance of traffic at the intersections to confirm the adequacy of the proposal.

6.2.6.7 Gladstone – Mt Larcom Road/Hanson Road/Landing Road

Although the EIS states that this intersection operates effectively for all scenarios, Calliope Shire Council suggests that capacity is not always a good measure for operating effectively. The design and layout of this intersection may not be ideal, and should the Department of Main Roads identify this intersection as an issue, Council would support further assessment of it.

6.2.6.11 Bruce Highway / RSF Site Access

Council is of the opinion that access to the RSF should be provided through the GSDA internal road network and not direct to the Bruce Highway. The EIS should be amended to include a review of this alternate arrangement so that traffic safety impacts on the Bruce Highway are minimised.

6.2.6.12 Summary of Intersection Effects

The summary of intersection effects should be revised once the amendments to traffic volumes suggested earlier are complete.

6.2.8 Public Transport

It is agreed that the effect on public transport from the project is minimal. However the project relies heavily on the use of charter buses and the use of these buses has previously impacted on local residents. The EIS should address the manner in which bus parking will be managed so that these vehicles are not parked in residential areas.

6.4 Rail Transport

The EIS should consider the impact of increased rail transport through Gladstone on the amenity of local residents.

While the project does not currently prefer the use of rail transport for the cartage of nickel ore, the use of this transport mode has the potential for significant impacts upon local residents and infrastructure. The EIS should include a statement that, should the slurry pipeline not be the preferred option for the haulage of ore, a fresh consultation process will be initiated with Local Government and the future rail system subject to a separate environmental impact statement.

The EIS should also investigate and comment upon the impact of additional materials (not ore) to be hauled on the existing rail network. This investigation should discuss the capacity of the rail network to manage the additional loading in addition to any impacts on local residents / amenity.

4. Social Impacts

4.1 EIS Methodology

The ToR for the SIA has been generally addressed in Section 10 and Appendix P of the EIS. However, the findings of the SIA have been constrained by the limited research undertaken for the SIA, (i.e. desk based research and consultations with key SIA stakeholders, e.g. impacts and mitigation/monitoring strategies are only identified at a generic/regional level).

The data used in the EIS dates back to 2001, and this could be considered too outdated to accurately reflect the current situation in the Gladstone region. It is important that the data collated and used for the analysis of the social impacts relates to all Local Government areas that are affected by the Project. It may be that there is a lack of data specifically relating to the City of Gladstone.

4.2 Terms of Reference

The following outlines the sections of the ToR that it is suggested have not been properly addressed in the SIA:

- ToR Section 4 – it is strongly advised in the ToR to consult with Advisory Agencies and other appropriate stakeholders throughout the EIS process. The proponent is furthermore advised to consult with Advisory Agencies to identify legislation, policies and methodologies relevant to the EIS process and to determine the appropriate parts of the community that should be involved during the EIS preparation stage. This does not appear to be reflected in the EIS.
- ToR Section 3.10 – It is suggested that more recent data be used to accurately depict the housing market in Gladstone and the region. No accurate impacts and mitigation measures can be developed if the data is not a true reflection of the current reality.
- ToR Section 3.10.2 – It is suggested that the impacts of both the construction and operational workforce and associated contractors on housing demand be reflected in a thoroughly researched Housing Model for the new housing required and the proposed Workers Village, which can then be also utilised in addressing support services and community cohesion.

4.3 Housing

Impacts on housing is identified as the largest social impact of the proposed project, including impacts on the private housing market, Department of Housing properties and emergency/crisis housing.

The Data sources used in the EIS preparation stage are somewhat dated and may not be a true reflection of the social and economic environment of Gladstone and region. It is also unclear as to the source of some of the data; ie Tables 10.3.4; 10.4.2; 10.4.3; 10.5.3; and Figures 10.4.1; 10.5.1.

Short-term Accommodation availability (page 10-9 to 10-10), gives an inaccurate depiction of what is available, such as the occupancy rate in Gladstone. Rooms are available but are generally booked for up to 3 months in advance. This has occurred in the past during festivals and the Comalco shutdown during July 2006.

It is apparent that several areas of this report have taken comments from the Advisory Services at Gladstone City Council out of context lumping them together with other agencies and other agencies comments and sourcing it incorrectly such as Sections 10.4.8 and, 10.7.3.1. For example:-

* 10.4.8 Rental Property first Paragraph - LJ Hooker estimated a 2% vacancy rate for their portfolio. The Gladstone Advisory and Tenancy Group was quoted as the provider of all data which is incorrect.
* 10.7.3.1. Displacement of Low Income Households – the source was misquoted by using CAR 1 construction experience.

Section 10.4.11 – Caravan Parks - The information is not accurately describing available caravan sites, tent sites, cabins and on-site vans, based on more recent information obtained by the Advisory Services of GCC.

10.4.12 and 10.7.2.5 Workers Villages – The EIS nominates the likelihood of the need to provide a Workers' Village for the project. In Section 10.7.2.5 potential locations are outlined. The EIS should acknowledge that a Workers' Village and its facilities would be the subject of a separate approval process quite apart from this EIS, and therefore it cannot be assumed that a Village has any land use rights provided by the EIS.

10.5. Project Workforce - It is stated that GNP will recruit locally and, according to Table 10.5.3 this will amount to 55% local workforce in 2007 and peak in 2009 at approximately 42% local workers being used. Council would question whether that proportion of the workforce (42% or 1258 people) can be sourced locally, as it would appear that to do so would mean the recruiting of workers from other existing jobs in the region. This then means that those industries need to recruit to replace, and hence more workers are imported. The impacts of a higher percentage of workers imported to the region – as opposed to strictly imported for the project - should be considered. Council acknowledges that the outcomes predicted in Table 10.5.3 have been obtained by modelling, but nonetheless feels that the situation as outlined above does actually occur. Any increase in imported worker numbers would of course also affect housing and accommodation figures, as shown is Section 10.7.

The EIS needs to take into consideration the indirect impact on housing affordability not just the accommodation of the construction and operational workforces and develop appropriate mitigation strategies for this impact.

Section 10.7.1.4 Summary of GNP Housing Demand - The conclusions reach in this section as to housing production indicate significant peak demand in housing requirements. Council would contend that it will be difficult to achieve these figures (how does the Queensland Masters Builders Association (Rockhampton) suggest that 600 units of housing could be produced per year?) without a significant increase in tradesmen and professionals involved in the land development/housing approval/housing construction industry in the region. This exacerbates the housing issue, as many of these would be imported workers, even if only for the time of the construction peaks. Purely from a local government perspective, for the nominated three year timeframe for short-term housing for Stage 1 (page 10-21), there will be a need to find more resources to process the necessary land use approval applications and building approval applications to cater with the doubling and trebling of the workload during this time. It may therefore be appropriate that in terms of addressing the impacts of the project, the proponent be required to negotiate with the Councils a funding arrangement for additional technical staff for the three year time period. It should be noted that the EIS has assessed that single-status workers are

accommodated in a Workers' Village, which as mentioned earlier also requires a separate land use approval process.

Section 10.7.2 & Appendix Q - Multi-faceted housing strategy to address Housing Demand - to overcome the shortfall in housing the Proponent states that GPN will implement a housing strategy. The three aims of this strategy read as a general outcome, and does not reflect how the shortfall will be overcome e.g. how will GPN 'ensure' that adequate housing is available, how will GPN 'stimulate' the creation of new housing; and how will concerns be addressed with regards to a large transient workforce during construction. The Housing strategy is somewhat vague without specific measures to really address the ToR. This relates to the Key elements of the strategy as well e.g. leasing stock is limited in Gladstone and the region, so how will leasing of existing rental properties be done. The strategies should reflect timelines and specific outcomes. With private developments, lead-time needs to be added to the development strategies.

The housing and population data supplied in the EIS should be compared with the latest Census data when it is made available. This should provide a more accurate reflection of the current growth within the Gladstone region.

It is suggested that mitigation strategies for housing to be developed for both the short and long term could include (and should be further investigated during the consultations with Local and State Government agencies):

- A Model for the Workers Village to include research and/or structured as previous or existing models, national or international, that has successfully integrated the needs of the Village residents and that of the existing local community, including data to back up the conclusions.
- Hard data should be used to reflect the current housing situation.
- The integration of new permanent workforce into the community is important for family life and by profiling the potential workforce will provide opportunity to the proponent to accurately state what the pressures on the local housing stock will be e.g. rentals, and other types of housing based on similar projects in the area and in other parts of Australia.
- Potential development of another caravan park (as the caravan park in Clinton was recently closed).
- Multi faceted developments where large apartment blocks are erected and used for contract workers for approximately 2 years.

4.4 Community Services

Given the significant workforce and housing issues which are likely as an outcome of this project, Calliope Shire Council questions whether social infrastructure has been sufficiently explored, identified or addressed in the EIS. As mentioned in Section 2 of this report, the incremental and cumulative impacts of large industrial projects is somewhat difficult to measure, but in a region where there appears to already be some issues with health, police, educational and support services it is incumbent on an EIS document to adequately address these issues. It is recognised that all levels of Government have roles to play in the social infrastructure of a region, however major industrial development, as a corporate citizen, should be party to addressing impacts.

It is noted by Council that in explaining the services and facilities of the Gladstone region, the EIS sometimes seems to place too much emphasis on Rockhampton features ie hospitals, and sometimes not enough emphasis on local features ie shopping facilities at Boyne Island/Tannum Sands

4.5 Positive Economic Opportunities for Local Businesses

The EIS identifies that local business will benefit from the project through a number of avenues.

Undertaking these works outside the region will limit the opportunity for local engineering companies to assist construction of materials and this will limit revenue from the project being spent in the Gladstone region. This partly contradicts the statement that employment will be created in the area.

4.6 10.10 Land Tenure

This section identifies several properties to be utilised by the project, but which are not currently included in the GSDA. Council only wishes to comment that this could be an issue in relation to formal land use approval

4.7 Visual Amenity

Section 10.13 provides a comprehensive analysis of the existing and projected visual landscape character of the refinery and RSF sites. It is acknowledged in the assessment that a significant change in landscape character will result from the proposal. However it is noted that these visual changes are within the context of existing industrial development and that mitigation of a number of visual impacts will occur due to retention of vegetation wherever possible.

Council's support the mitigation measures provided in Section 10.13.10 of the EIS and will require these measures to be included as elements of conditions of development approval for the Material Change of Use and Building Applications.

4.8 Noise

Section 8.8.5.5 identifies that there will be exceedances of "Background Plus" noise criteria at two residences during night time operation but that both sites are within the "Background Creep" criteria set by EcoAccess and further that both sites are located within designated industrial areas. It is acknowledged that the "Background Creep" criteria for these two residences are acceptable given the existing background noise levels and the location of the residences.

The noise assessment conducted for the project does not consider the impacts from any additional rail transport. Where inputs and outputs are proposed to be transported via the existing rail infrastructure through Gladstone, the impact from noise on the local amenity of areas needs to be assessed. The EIS should be supplemented to include this assessment.

Council's support scheduling of the high noise events to minimise impacts on the local community and the provision of briefings to the local community of timing of noise events during the construction phase (as stated in Section 14.10.3 of the EMP). Requirements for construction to occur during the hours of 6am-6pm should be included as a condition of approval as should the need to notify the local community of atypical noise events.

Council's note that the EMP for operational noise specifies compliance with the Environmental Authority. It is noted that these criteria are yet to be determined and it is considered that criteria should have been developed during the EIS. In the absence of such criteria Councils request that noise emissions comply with the EPA requirements for background plus criteria as a condition of the development approval.

4.9 Air Quality

The air quality modelling for the EIS considers the effects of each aspect of the proposal and is considered to represent a reasonable outcomes in terms of predicted outputs of SO_2 and NO_2 each of these are within guidelines limits.

Council's support management and monitoring proposals included in the EMP (as stated in Section 14.10.2 for construction and 14.11.2 for operation) and will requests that these elements form conditions of approval for the proposal.

5. Environmental Issues

5.1 Environmental Health

The tidal flats along Hanson Road in the vicinity of the proposed GPN Plant currently drain well, preventing ponding of waters which can be breeding grounds for mosquitos. Council is concerned regarding the potential for the construction and operation of the GPN Plant and associated infrastructure to result in the ponding of water and creation of areas that promote breeding of mosquitos and other biting insects. This is a significant community health concern for the residents of both Gladstone City and Calliope Shires. Councils wish to emphasise that good design and management of permanent ponded areas and reduction of the potential for ponded areas to occur during construction are vital for the management of this issue.

Councils wish to be consulted during the detailed design phase regarding the design of ponded areas for stormwater treatment etc. A management plan should be prepared and submitted to Councils detailing the design, construction and operational measures that will be put in place to prevent ponding of water that could form a breeding ground for mosquitos and other biting insects.

5.2 Flooding

Section 8.2.1.7 identifies that stockpile areas to the north of the refinery will be influenced by the fill levels for the Wiggins Island Coal Terminal (WICT) proposed to be conducted between the Calliope River and the stockpile areas, with the relative level of the WICT rail link determining the extent to which flood waters may affect the stockpiles areas. Council considers that the impact of flooding on the stockpile areas should be considered by the EIS having regard for the potential for the WICT not proceeding. Alternate filling proposals should be considered.

5.3 Water Allocation

Section 9.6.9.1 identifies that the operational flows into the Farmer Creek catchment will reduce by 47%. Considering the significance of the reduction it is not considered that sufficient analysis has been provided to assess the potential impacts of such a reduction. Further the EIS identifies that downstream water users are unlikely to be impacted by the reduction in total flow, but that at least one water allocation from Farmers Creek will be impacted directly and that an alternate allocation may be required. It is considered that the EIS should provide further analysis of the downstream impacts of flow reduction and identify alternate supplies for the directly impacted allocation.

5.4 Waste

5.4.1 Construction and Operational Waste

Section 4.10 of the EIS notes that the Gladstone City Council Waste Transfer Station will be utilised for some of the construction and operational wastes (both recyclable and landfilled waste). It is also noted that overall quantities of waste streams are outlined in Section 4.5.3. Councils seek clarification regarding the volume of waste and specific waste streams that are likely to be passing through the GCC Waste Transfer Station. It is noted that during other large construction projects in the region, the Transfer Station has operated at maximum capacity and the ability of the service to manage increased

volumes is of concern. Council is supportive of proactive waste management measures being employed to reduce the impacts on the transfer station capacity and landfill capacity and life.

The EIS has outlined a number of areas in which waste reduction, avoidance, recycling and reuse are implemented within the GPN plant and process. It is noted that Section 4 of the EIS states that a Waste Management Plan will be prepared for the construction and operation of the project. Councils requests that this plan is submitted to Councils for review and input prior to the commencement of construction. Councils are fully supportive of any reuse/recycling options for the various waste streams generated by the process and encourage firm commitments to such initiatives.

5.4.2 Waste Water Disposal

Councils wish to raise a number of questions and concerns regarding the proposed waste water discharge stream into Port Curtis.

The waste management section of the EIS (Section 4) discusses the liquid waste streams that are reused where possible within the GPN Plant. However, Section 4.6 highlights a number of waste streams that will be discharged to Port Curtis as they are not suitable for reuse within the process. Given the presence of several large industrial sites within the Gladstone area with high water usage requirements, have the options of reusing this waste stream at other plants been explored? Councils wish to see all possible reuse options investigated before discharge into Port Curtis.

Has the risk of algal blooms as a result of the introduction to warmer water into the Harbour been assessed? While it is likely that generally higher turbidity during the summer months will reduce such a risk and there is a proposed maximum temperature differential of 5^0C, Councils require an assessment of whether this is an increased risk, particularly during winter months.

While utilisation of the 80^{th} percentile of ambient data for a water quality trigger value where default ANZECC (2000) water quality guidelines are not available is an accepted method, it is noted that the data being utilised as 'ambient' in Table 8.3.6 is from a study conducted between December 1998 and November 2001. Since that time, the RTA Yarwun Alumina Refinery has been constructed and commissioned and this refinery has an outfall at Fishermans Landing. Councils question whether this data can be considered the best representation of current 'ambient' conditions in Port Curtis.

Councils note that Table 8.3.8 provides water quality objectives for a number of parameters within the discharge stream. Councils wish to clarify whether these are the only parameters of potential concern in the discharge stream. For instance, what are the expected concentrations of nutrients (nitrogen and phosphorus) within the discharge? Section 2.3.6 notes that ammonia is used to adjust pH within the process, however ammonium sulfate is an output of this process. Does this remove any elevated concentrations of nitrogen from the discharge stream?

Councils notes that the water quality guidelines for manganese were developed with consideration for the potential impacts on soft coral species as these were acknowledged by CSIRO to be the marine organisms that are most sensitive to manganese. The EIS (Section 8.3.10.2, p8-46) also notes that mangroves and seagrass are other habitats of concern within Port Curtis. The CSIRO study (Stauber 2006) in Appendix H notes that acute and chronic effects of manganese on marine organisms is usually only detectable at concentrations of >5 mg/L and that there is little overlap between typical concentrations of Mn in seawater (<0.01 mg/L) and concentrations that impact on marine organisms. However, Councils wish to know if bioaccumulation in fish or crustaceans is a cause for concern.

While the EIS notes that several discharge locations were modelled, only Wiggins Island Coal Terminal and Clinton Coal Terminal Wharves were listed (Section 8.3.12.1). While it is logical to place the discharge in an area that is already highly disturbed and where it is close to the main channel where high water flows are encountered, Councils wish to see a more detailed assessment of potential options for locating the discharge further offshore.

Has consideration been given to the timing of the discharge? Table 8.3.10 illustrates that the distance downstream from the diffuser required for the various parameters to be compliant with the adopted water quality objectives increases with lower tidal velocities. While it is acknowledged that the discharge flow is substantial, has consideration been given to discharging during peak tidal velocities only? Also, has consideration been given to discharging on the ebbing tide only?

Are there likely to be any adverse impacts on the water quality in the Gladstone Marina given that the discharge location is close to this area and the marina is not well flushed?

6. Conclusion

Councils appreciate the opportunity for input into EIS documentation, and would be pleased to discuss issues raised in this report with the Department and the proponent.

Damian and Barbara Ahern
1316 Calliope River Road
Yarwun QLD 4694
24th of May 2007

The Coordinator General
Attention: EIS Project manager
Gladstone Nickel Project
Major Projects
Department of Infrastructure
PO Box 15009
CITY EAST Qld. 4002

Dear Sir / madam

We are writing this letter to voice our concerns and comments on the EIS document information for the proposed Gladstone Nickel Project.

Firstly the public review and reply period is again far too short considering the magnitude of the proposed project, with EIS comply time usually taking a few years in some cases and we are left with a disproportional review time period of just a few weeks.

The point of our main concerns are listed below, we wish to have further discussion to fully resolve our opinion.

- Increased heavy vehicle traffic flows
- Increased air pollution levels and particulate fallouts in which our rainwater collection and air quality will be to exposed to in the future
- Marine and land area exposure to contaminations due to the process plant operations
- Lack of consultations with local community groups in the EIS and Review period.
- Social impacts with the construction work forces required and increase traffic flow that will be generated.
- Visual effects of the operational plant that will be viewed entering and exiting the Gladstone City via Hanson Road.
- Residual pipelines and residual storage area at Aldoga what are the increased risks to the environment and community if some breach of containment occurs? Who will clean up ?

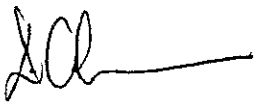
Finally we have been residents in Yarwun for the last 8 years and have 4 children attending school at Gladstone state high school and at Yarwun primary school, are we wish to maintain our current lifestyle, security, health and safety standards.
Also our property value is very important as not to adversely affect by the installation and operation of the proposed Gladstone Nickel Project.

Thank you for your time to review our comments and concerns with this EIS of the Proposed Gladstone Nickel Project.

We can be contacted at home on 07 49736016 or 0409615900 to arrange a mutually agreeable time to meet and discuss these items in greater depth.

Once again thank you for this opportunity.

Yours truly,



Damian Ahern, Barbara Ahern
Yarwun Community Residences

Fitzroy Shire Council

THE BIG RIVER SHIRE

28 May 2007

EIS Project Manager
Gladstone Nickel Project
Major Projects
Department of Infrastructure
PO Box 15009
CITY EAST QLD 4002

Dear Sir / Madam

Re: Gladstone Nickel Project – Environment Impact Statement

With response to the above document, the relevant sections pertaining to the Fitzroy Shire have been perused and the concerns of Council are generally met in relation to the usage of roads and weed management.

For Shire roads, Council concurs with Clause 6.2.3.3 (Local Government Controlled Roads and Private Tracks) and requires all costs determined for these works are borne by Gladstone Projects Nickel Limited (GPNL).

For management of weeds along the route within the shire, Council concurs with Clauses 7.4.11.3 and 7.4.12.4 (Spread of weeds) and requires the "comprehensive weed management procedure" approved by Fitzroy Shire Council.

Yours faithfully

Bruce Russell
Acting Director – Technical Services

FOR ENQUIRIES PLEASE CONTACT:	YOUR REFERENCE:	IN REPLY PLEASE QUOTE:
Bruce Russell ☎ 4931 5425		09/02/009.AD1 5 kh Gladstone Nickel Project 2805 [illegible]

Shire Administration Centre, 1 Ranger Street, Gracemere, Queensland. Telephone: (07) 4931 5400 Facsimile: (07) 4933 5[illegible]
Address all correspondence to - The Chief Executive Officer, P.O. Box 40, Gracemere, Queensland 4702.
Email - ceo@fitzroyshire.qld.gov.au www.fitzroyshire.qld.gov.au

East End Mine Action Group (Inc)
(EEMAG INC)
East End, Mt Larcom. Q. 4695

Chairman:	Secretary:	Research &Communications:
Mr Peter Brady	Mrs Heather Lucke	Mr Alec Lucke
Tel/Fax 07 4975 3561	Tel/Fax 07 4975 3590	Tel/Fax 07 4975 3590

The Coordinator-General
Attention: EIS Project Manager
Gladstone Nickel Project
Major Projects
Department of Infrastructure
PO Box 15009
CITY EAST QLD 4002

21 May 2007

Dear Sir/Madam,

The members of the East End Mine Action Group Inc (EEMAG) wish to lodge a submission on the Environmental Impact Statement for the Gladstone Nickel Project. We thank you for this opportunity.

Our submission is focussed on Section 2.6.4 Limestone; quote from Page 2-26 "It is anticipated that limestone will be supplied from one of the existing limestone mine sites (East End or Taragoola). Limestone will be ground and slurried at the mine site and pumped to the refinery by pipeline." Table 2.6.1 documents the design capacity for Stage 2 as 1,426,000 tonnes per year, with the Quantity/Capacity to be determined.

We are concerned that the EIS;

(a) does not state the source of the water to be used in the limestone slurry;
(b) does not state what quantity of water is intended to be used in the limestone slurry,

- EEMAG members hereby lodge our very strong objections to the East End mine using mine pit discharge water to slurry ground limestone to the Gladstone Nickel Project. We respectfully request that ONLY sea water or waste water from the nickel project be used for limestone slurry.

We are greatly concerned that the East End mine would need to significantly expand its operations to supply ground limestone (1,426,000 t/y) and lime (103,000 t/y) to the Gladstone Nickel project, which would result in increased mine pit water discharges.

- Any expansion of the East End mine will inevitably worsen the problems being experienced by affected landholders, given the mine's record plus the fact that its environmental approvals are framed on the false benchmark that [worsening] mine-induced water depletion has not migrated outside the East End working lease.

Additionally, there is evidence that the mine is regulated to conform with a 1977 departmental "deep structure commitment" to minimise the company's compliance; that integration of new and progressive socio-environmental government legislations into the East End Mine case is highly unlikely because of these commitments and that public servants "try to defend some of their old decisions realising that earlier decisions were not as good as they should have been". *(Refer EEMAG's submission to the First Biennial Assessment of the National Water Initiative detailing evidence that science used for the Calliope River Water Resources Plan conforms with science used for environmental approvals for the East End mine and is shaped to conform with the 1977 "deep structure commitment" - Attachment 5)*

From EEMAG's experience during the 12 year old dispute, we believe that this 1977 "deep structure commitment" systemically influences ALL decisions relating to management of the East End mine's environmental and social impacts, including administration of Water Reform and the National Water Initiative. We are alleging that the "deep structure commitment" (reinforced by the Cabinet support package of 14 August 1995 so that it encompassed QCL's Gladstone Expansion Project's tripling of production) is prejudiced against the interests of landholders adversely affected by the mine, that it overrides Special Conditions set in place in 1976 and denies us our right to an effective remedy. There is evidence that its sphere of "minimal compliance" will continue to expand as the mine expands.

- **Unless the 1977 departmental "deep structure commitment" to minimise the company's compliance is annulled, relinquished or circumvented, the evidence is that it will be IMPOSSIBLE for the East End mine to expand to supply ground limestone and lime to Gladstone Nickel without worsening the adverse impacts on landholders and the local karst water resources system.**

There is a backlog of outstanding issues for landholders adversely affected by the East End mine's cumulative depletion on the water table that have not been redressed, despite Special Conditions to safeguard landholders' water supplies attached to the grant of leases in 1976 and despite environmental legislation to advance efficient and environmentally sustainable management of water resources.

These issues were not fairly and justly resolved under 1996 IAS/EIS requirements during / after their Gladstone Expansion Project's trebling of production, were not required to be redressed for the mine's Lease Renewal in March 2003, nor dealt with in the granting of a new mining lease in 2006 and have not been resolved since.

- EEMAG members respectfully request that Cement Australia's East End mine NOT be granted approval to expand their operations to supply limestone to the Gladstone Nickel Project until an effective remedy to this 12 year old dispute is developed and implemented i.e. until ALL outstanding issues are fairly and justly resolved. *(A letter to Cement Australia's CEO, Chris Leon dated 22 March 2007 with a list of twenty (20) affected landholders, some of whose problems date back to 1996 is Attachment 1)* Although company representatives recently visited landholders in the 33 sq km zone, from feedback we understand that the majority of issues are not finalised, that issues relating to noise (1 case) apparently were not considered, and that the company is not exhibiting any urgency to resolve the outstanding matters.)

BACKGROUND TO DISPUTE:

EEMAG has been in dispute with the Queensland Regulating Agencies and Cement Australia (formerly Queensland Cement Limited) for 12 years regarding;

(a) the degree and extent of cumulative mine induced water depletion;
(b) alleged unreasonably delayed and inadequate provision of alternative water supplies to many affected landholders under the mine's Special Conditions i.e. "minimal compliance";
(c) framing the East End mine's EMOS and Environmental Authority on the false benchmark that mine-induced water depletion has not migrated outside the East End Lease i.e. minimal compliance;
(d) the fact that the mine's Environmental Authority does not contain any conditions to minimize / repair off-lease water depletion caused or likely to be caused by mine

dewatering and thus allows the mine to cumulatively deplete the local karst aquifer system without limit;

(e) whether the general environmental duty is being complied with;

(f) the bulk of local landholders water supplies have been inappropriately traded-off /re-allocated to mine dewatering by way of falsely benchmarking the mine's impacts for their environmental approvals and this flows into administration of Water Reform and the National Water Initiative; *(Refer EEMAG's Submission to the First Biennial Assessment on the National Water Initiative of 12 February 2007 – Attachment 5)*

(g) there is NO process that allows affected landholders to challenge / appeal the merit of technical decisions by Departmental officers on water resource matters.

The East End mine has continuously discharged pit water downstream as waste since 1979 and is licensed to discharge up to10 megalitres per day. Water monitoring data has been collected quarterly since 1977. In 2000 the mine conceded to a mine impacted area of 33 sq km and in 1997, 1998 and 2003 Dr P James, Prof R Volker and DI Smith evaluated the water monitoring data and determined that mine dewatering is the principal cause for an area of more than 60 sq km to be suffering variable water loss of up to 20 metres with loss of (30 km) of perennial creek flows.

The benchmarks used as the basis for the mine's environmental approvals have apparently been applied to the Calliope River Water Resources Plan approved in 2006. We understand that this is the first step in a process which may ultimately convert Cement Australia's discharge license to a water allocation.

On 17 February 2007 EEMAG held a well-attended public meeting of landholders in Mt Larcom at which a Petition was circulated calling for recognition of widespread local water depletion as determined by 30 years of water monitoring, and for support for a grout curtain close to the Cement Australia East End mine with pump back of good quality water under recharge conditions to the Wallaby Lane injection site.

On 7 March 2007, the Petition with 130 signatures was lodged by Hon Liz Cunningham in the Queensland Legislative Assembly. The petitioners are local landholders in the affected or potentially affected Cement Australia Project Area. Although some Gladstone or other addresses appear on the Petition they are [other than in one or two exceptions] people who own land within the Project Area but live elsewhere. *(A copy of the Petition form and of Minister Wallace's response to the Clerk of the Parliament dated 19 April 2007 is Attachment 2)*

- We are fearful that approval for Cement Australia to use pit water to slurry limestone to the Gladstone Nickel Project, would prove counter productive to the grout curtain proposal.

<u>National Competition Policy</u>: EEMAG is alleging that the 1977 departmental "deep structure commitment" to minimise company compliance equates to an involuntary subsidy being levied on landholders adversely affected by the mine's operations.

EPA's 2001 decision to frame the mine's 2002 EMOS and Environmental Authority on 1996 IAS findings that mine induced water depletion extends only approx 500 metres from the pit (i.e. that water depletion has not migrated outside East End working lease 3631) instead of using the Company's 2000 findings of a mine impacted area of 33 square kilometres, apparently acted in accord with the above departmental "deep structure commitment". It is alleged EPA, by failing to take into account the 33 sq km mine impacted zone in framing

Cement Australia's EMOS and Environmental Authority and by not requiring the company to comply with environmentally sustainable practices for lease renewal, acted in an unreasonable and inappropriate manner that far exceeded their discretionary powers.

The costs to landholders of decreased land values and economic loss allegedly caused by mine dewatering in the 33 sq km zone, and the unmet provision of some alternative water supplies were thus NOT required to be redressed prior to lease renewal in March 2003 despite being administratively covered by the term *"affect injuriously"* in Condition 11 of the 1976 Special Conditions - and despite EEMAG's requests they be dealt with as a compliance matter. (Note: The 1976 Special Conditions remained in force until Lease Renewal in March 2003, when weaker Conditions were set in place.) *(Letter to DME dated 16 November 1999 Attachment 3)*

Since these costs are not recognised within the mine's environmental approvals and not redressed, they are not factored into the Company's production costs. Instead, contrary to the principles and objectives of National Competition Policy, they are imposed on the various small landholders adversely affected by the mine's operations.

EEMAG interprets that under the NCP "User pays" system, landholders suffering mine-induced water depletion would be penalised by having to pay higher costs for reticulated water (if it was available) and by having to compete with Industry for cost and accessibility.

Professor Brian Roberts, while compiling the federally funded $100,000 Mt Larcom Community Restoration Project Report, stated that farmers could afford to pay a maximum of $150 per megalitre. *(CD of 4 volumes of the Mt Larcom Community Restoration Project Report Attachment 4)*

Water Reform and National Water Initiative: The Calliope River Water Resources Plan has been completed on the basis of surface and overland flow only, and on the false benchmark that mine-induced water depletion has not migrated outside the East End mine working lease No 3631. Under water resource plans, licences ultimately translate into allocations. *(Related issues are dealt with in EEMAG's February 2007 submission to the First Biennial Assessment of the National Water Initiative, which provides evidence the 1977 departmental "deep structure commitment" flows into Water Reform and the National Water Initiative. Attachment 5)*

Cement Australia are licensed to discharge 6 megalitres per day under ordinary circumstances and 10 megalitres per day under recharge conditions. Events are thus in train for the mine to ultimately receive a water allocation of up to 10 megalitres per day and become the legal owners of ALL water intercepted from the underground aquifer. From the landholder's perspective such an allocation would be a wilful misappropriation of rural community assets.

However, if the essential natural water resources could be returned to pre-mining health (by way of an effective grout curtain) the impacts on landholders' supplies could be redressed, the dispute could be properly managed and meaningful co-existence with the mine could begin.

- EEMAG members would be extremely grateful if the Office of the Coordinator-General could assist in a fair and just solution to this entrenched dispute within the earliest possible timeframe – but certainly prior to approvals for the Gladstone Nickel Project – given that the East End mine's operations would need to significantly expand to service Gladstone Nickel's needs.

We have attached separate information on the volumes of water needed to reinstate supplies to our rural districts and other relevant information. If you require any additional information, we would be happy to provide it.

Administrative officers and others EEMAG have dealt with in recent times:

DNR&W Joe Pappalardo, Phone 49670770
Julia Carpenter Phone 49670978
Ed Donohue Phone 49384584
Tim Jones Hydrologist, author of May 2006 DNR&M Review is no longer with the Department
Bruce Pearce Phone 38969129
(Bruce Pearce is currently undertaking a review of the science)

EPA Jon Womersley Phone 49360566

DME Noel Barker Phone 49384321
Paul O'Sullivan Phone 49384440

Cement Australia contacts
Sandy Thomas Head Office Sydney Phone 02 99009602
Sandra Collins, Mine Manager Phone 49753033

Groundworks Pty Ltd Cement Australia consultants
David Kershaw Brisbane Phone 38710411

Yours sincerely,

Heather Lucke
Secretary
Attached./

C/c: Hon Malcolm Turnbull MP, Minister for Environment & Water, Canberra 2600
Hon Ian Macfarlane MP, Minister for Industry, Tourism & Resources, Canberra 2600
Hon Paul Neville MP, Member for Hinkler, Bundaberg 4670
The CEO, National Water Commission, Canberra 2600

EEMAG members respectfully request your support on matters as raised above.

East End Mine Action Group (Inc)

(EEMAG INC)

East End, Mt Larcom. Q. 4695

Chairman:	Secretary:	Research &Communications:
Mr Peter Brady	Mrs Heather Lucke	Mr Alec Lucke
Tel/Fax 07 4975 3561	Tel/Fax 07 4975 3590	Tel/Fax 07 4975 3590

25 May 2007

The Coordinator-General
Attention: EIS Project Manager
Gladstone Nickel Project
Major Projects
Department of Infrastructure
PO Box 15009
CITY EAST QLD 4002

Dear Sir/Madam,

Please find attached a submission dealing with local projected water demand in the Cement Australia Project Area and at Mt Larcom township, that finalises EEMAG's submission dated 21 May 2007.

We have attempted to provide an overview of the local circumstances, the problems associated with severe mine dewatering impacts while stressing the urgent need for a district remedy.

We have also provided sufficient documentation to demonstrate that there is a mature political, administrative and corporate scandal associated with these unresolved circumstances.

What is needed at this very late stage is some strong leadership and consultation coupled with a genuine desire to arrive at an equitable resolution of a 12 year old intractable dispute.

Your interest is welcomed.

Yours sincerely,

P B Brady
President

Alec Lucke
Research & Communications

CONTENTS

Projected Demand for Rural Water Supplies within Cement Australia Project Area.

VOLUMES OF WATER DEPLETED FROM AREA

Note: The recharge formula of 900 mm average rainfall = 5% recharge at 2% storativity, determined by QCL's modelling consultant Dr Frans Kalf has been used in the following calculations. EEMAG confirms a 2% storativity finding from their research of irrigation use at Bracewell in 2006. (See attachment 7)

1. From a conservative interpretation of the water monitoring data collected quarterly since 1977 (and available to landholders) it is calculated that the affected area of 100 square kilometres shows an average water level loss of 10 metres. (See attachment 22 and Map Att 26)

2. **This amounts to a depletion effect of 20,000 megalitres from groundwater storage that needs reinstating. (See attachment 22)**

3. The loss of approx 30 kilometres of surface storage from perennial creeks was not taken into account in the above calculations. (See Presentation to Productivity Commission Inquiry Hearing on Impacts of Native Vegetation and Biodiversity Regulations / Attachment 9)

4. In Peter Brady's "Detailed District Irrigation Usage compared to Mine Pump-out Figures and Revised More Informative Table A" of November 2001, environmentally sustainable pre-mining irrigation consumption for 1980 was documented at approx 1,323 megalitres. This calculates that 30 % of annual average recharge was used for irrigation. In terms of the historical record, this annual consumption was environmentally sustainable. (See attachment 7)

5. By 2000/2001 irrigation consumption had declined to approx 567 megalitres. This equates to 14% of average annual recharge being used for irrigation. Consumption has fallen at Cedar Vale, but despite renewed irrigation at Bracewell from August 2005 to the present it is considered that by taking into account the closure of the Lucke piggery in May 2006 (farm consumption of 1.1 ML week) district usage remains stable against 2000 / 2001 figures. (See attachment 7)

6. The current irrigation consumption equates to14 % of the annual average recharge capacity of 4,422 megalitres and together with other lesser local usage is thus not an explanation for the depletion of 20,000 megalitres from groundwater storage. (See attachment 7)

7. In 2007, irrigation activity at Bracewell and Cedar Vale has detected the presence and importance of gravitational underflow. The gravitational underflow at Bracewell has been documented while its incidence at Cedar Vale is confirmed by pumping experiences.

8. The poor historical record of pumping of mine pit water on an uninterrupted basis for the past 27 years is not of sufficient integrity to provide a trustworthy guide to the actual amount of water discharged by the mine. In addition to storage depletion, periodic recharges have also been removed from storage.

9. Pre-mining, the natural range of aquifer fluctuation and constancy of levels suggests that base flows from the limestone sustained the local perennial creek systems while geological constraints at the mine site minimised gravitational underflow escaping downstream of the mine.

10. The mine was sited at a gravitational low point where springs and riparian flow occurred **seasonally.** The subsequent lowering of the water table by pumping, circumvented (on the basis of historical upgradient sustainability) the natural impediment to any substantial discharge via the gravitational underflow.

11. While compiling the October 2003 Mt Larcom Community Restoration Project Report, Professor Brian Roberts calculated that farmers could afford to pay a maximum of $150 per megalitre for water for farming use.

12. It is difficult to envisage that imported, reticulated water could be made available at or below the $150 ML cap for irrigation / farming purposes.

13. Scope may exist for reticulation of superior quality imported water for household and garden use. Presently it is estimated there are about 110 rural homes that could be serviced. However, the viability of such a scheme may depend upon relaxation of the existing policy that restricts sub-divisional approval of rural land to 80 acres. The superior quality of imported water remains an attractive option for house and garden where the same cost constraints do not apply as to irrigation.

14. The State Government and its Regulating / Planning Agencies should not permit the continuing degradation or abandonment of the environment by proposing / sanctioning a water reticulation scheme in isolation. This would be an ineffective remedy, and a virtual admission of defeat of the Gladstone environmental industrial model.

15. Abandonment of the concept of co-existence and buyout is not an acceptable option.

Grout curtain

After 27 years of continuous discharge of water as waste there are insufficiently available volumes of water to seriously contemplate pumping water back as a means of rectification. The salinity of the pit discharge water (generally above 3000 µS/cm except during/after recharge) would also be likely to increase salinity in some parts of the receiving aquifer system.

Grout curtaining within close proximity of the mine presents the only viable solution to counter entrenched water depletion of rural land. As the mine expands, impacts must worsen so that impacted communities have no prospects of achieving their utopian dreams of innovative / boutique farming or even the simple enjoyment of environmental pleasures.

Remediation of the depleted storage within the various impacted aquifers (by way of an effective grout curtain) represents the cheapest and best option for a district solution and long term remedy.

The procedures are well understood and there are numerous case histories of successful remediation with grout curtains listed on the internet under much more challenging circumstances than those at East End. Consideration of suitable sites and construction of surface storage with accompanying reticulation would seem to represent a lesser option.

Even on the most conservative estimates there is such readily available and extensive subterranean storage capacity as to warrant a **feasibility study** and ultimate construction of a grout curtain within a strict timeframe. This available storage capacity should be regarded as off-setting the cost of a grout curtain. It could also be possible that water, captured by remediation of the local aquifers could be of better quality than the original pre-mining supply.

Overview of changing district circumstances

When Queensland Cement & Lime leases were approved in 1976 the project area was well established as a mature dairying and agricultural community. Over time, the prioritising of the limestone resource, cumulative mine dewatering impacts, changing commodities markets, globalisation, industry deregulation and poor seasons wrought havoc upon the district's prospects.

The controversy over water depletion and the mine's trebling of production in 1996, in combination with reduced water accessibility eroded confidence in the future prospects of farming and contributed to its death knell. Surface and underground water from the closely settled up-gradient communities gravitates towards the open cut mine where for 27 years it has been discharged downstream as waste while co-incidentally benefiting just three landholders. In what seemed almost like the blink of an eye (10 years actually) landholders exclusively committed to farming shrunk to just a handful. When the district could no longer lay claim to being a farming community values plummeted and an identity crisis ensued.

The *original 1976 conditions (Att 1,2,3) attached to the mining leases gave landholders an assured allocation and preservation of a water supply including irrigation. However this was never properly honoured. There is abundant evidence that the Company and the Regulating Agencies colluded to adopt a minimalist strategy. *Crown Law advice to the Mines Department in 1996 (Att 4) spelt out how the term "injurious affection" should be applied under its broadest common law meaning and that compensation was payable where devaluation of property could be attributed to mining impacts. (See att 12, 13,14, 15, 16,17 and 18.)

Apart from the various publicly released documents in which the Company concedes mining impacts, for instance the *Kalf 2000 mine impacted area, (Att 5) landholders in some instances hold letters from QCL admitting to injurious affection. Apart from being very tardy about properly enforcing affected landholders' entitlements to replacement water supplies, the Regulating Agencies have resisted administrative enforcement of the payment of compensation for land devalued by mining impacts – despite the Crown Law advice and

despite the Land Court decision of 28 February 2002 finding that mine dewatering caused loss of land values in the 33 sq km Kalf zone. (See attachment 8)

In a number of documented instances individuals sold into a virtually non-existent real estate market at less than the asset value. Historically perennial creeks that have become seasonal at best – remain permanently blighted. Economic loss attributable to mine dewatering and noise (in 1 case) have not been fairly and justly redressed, factored into the Company's cement production costs nor recognised by the Government. Such costs have been imposed on small landholders in the mine's project area - NOT on the wider, overall community that benefits from the project and as such, these imposts remains contrary to the intent, principles and objectives of National Competition Policy.

We consider the "discretion" exercised by the Regulating Agencies not to enforce entitlement to compensation for property devaluation resulting from mining impacts ultra vires as the entitlement is no less applicable under the special conditions than the entitlement to an alternative water supply that is only partially honoured by the Regulators. Under the 6 year statute of limitation the timeframe for legal action under the original special conditions expires in 2009. (See attachment 6,10,11)

The creation of the very extensive nearby Aldoga Industrial Estate in the 1990's coupled with the State Government buyout of the Targinnie community 2002 - 2007 meant that competition for land within relative proximity to Gladstone began to hot up. As real estate values elsewhere rose dramatically, there was a sudden quickening of interest in Mt Larcom due to its convenient location and disproportionately lower values. With the water depletion issue attracting less media coverage and realisation that the commonly available 80 acre blocks offered a competitive advantage and entry into a rural residential lifestyle over the more highly priced 2 or 5 acre subdivision elsewhere in the Shire, sales and the values of broken up farming holdings rapidly escalated.

Outsiders buying into the community had no knowledge or basis of comparison on which to gauge past and present water access. Additionally, the availability of water to rural residential blocks, although essential, is less crucial than for farming. For instance, a lifestyle block could theoretically survive by importing water while the practical reality is that a local farmer cannot. However, it must be recognised that owners of lifestyle blocks invariably demand improved amenities and in the longer term will not willingly settle for less.

The spin off from the coal mining boom also buoyed local sales as cashed up individuals realised the great Australian dream of owning their own acreage.

The evidence is overwhelming that the Regulating Agencies have:

1. neglected their charter and /or
2. sought to confuse the issue, by rewriting local history (and the science) by among other things, falsely claiming that the principal cause of depletion rested with drought and that with sufficient rain the aquifers would largely recover.
3. this strategy essentially minimised landholder's claims and entitlements
4. and largely exonerated the Regulating Agencies and the Mine from their neglect and from having to deal with the inconvenient truth that artificially depleted aquifers cannot recover.

5. miscalculated the community's resolve that the science (and therefore landholder's entitlements) must be founded on a meritorious evaluation of the science (For 1-5 See attachment 19, 20, 21).

It is also established beyond doubt that Cement Australia adopts a reactive rather than a pro-active stance in dealing with local issues. The accompanying attachments confirm to date no improvement in their corporate culture or strategy has taken place. (See attachments 11, 24 and 25.)

The appreciating real estate market from 2004 onwards was a largely circumstantial flow-on consequence of Aldoga and Targinnie that serves only to illustrate the old adage that even an ill wind may blow some good.

Current circumstances

For most of 2007 DNR&W hydrogeologist Bruce Pearce has been reviewing past studies and assessing the status of local aquifers. Although this study is not yet completed, Bruce has communicated verbally that local aquifers are severely depleted and remain at record lows at East End, Bracewell, Hut Creek and Cedar Vale. These conclusions are consistent with other independent conclusions derived from examination of the water monitoring data collected quarterly since 1977.

Local aquifer assessments are complicated by incomplete and inadequate mine pump out figures (continuous dewatering began in 1979) that prevent determination of either a water balance i.e. water pumped out, when adjusted for other aquifer losses, should match the volume removed from storage, or in calculating storativity i.e. the content of water relative to other material in the aquifer.

It is arguable that the best available data can be drawn from conclusions reached from close monitoring of irrigation in Bracewell above Weir 2 in November 2005. In this report entitled, "New data gives permeability, storativity values and means of calculating a water balance for Bracewell" EEMAG calculated that each 4.7 mm of water removed from the Bracewell aquifer equalled 1 megalitre or the equivalent of 2 % storativity.

Mine pit impacts have not been accountably reassessed since the controversial and understated findings of the Kalf "Mine pit zone of influence" was released in 2000. Five kilometres of the formally perennial Machine Creek within the 33 sq km zone has become seasonal at best. Since 2000 the mine has continued to expand and impacts, particularly at East End, have markedly worsened with the inevitable widening and deepening of drawdown effects. (See attachment 5 and 26).

In 1996 QCL provided replacement bore 96-20 on the adjacent Geaney property by drilling to 45 m. In that timeframe to the present, Bore 96-20 has lost more than 10 m of water. In 2006 Cement Australia provided another replacement bore on the same property for the first failed replacement bore by drilling to 84m and obtaining less water than they did 10 years ago at 45 m. This pattern of remediation is characteristic of the band-aid type solution associated with drilling ever deeper replacement bores into an already over exploited and chronically depleted aquifer. The only assured consequence of this activity is that water will be drawn from further and further afield. It also fails to take into account the universally recognised fact that artificially depleted aquifers cannot recover.

Water Reform and National Water Initiative

It is alleged that the 1977 departmental "deep structure commitment" to minimise company compliance equates to an involuntary subsidy levied on adversely affected landholders. In 1995 the *Goss Cabinet reinforced these inequitable circumstances by entering into a commitment that environmental licensing of the expanded East End mine would remain unchanged. The decision effectively binds public servants to the Cabinet decision and explains much of the ineffectual conduct and posturing engaged in by the Regulating Agencies. EEMAG is committed to the dissolution of this iniquitous arrangement and as stakeholders opposes any further preferential treatment of the company. (See attachment 23)

EEMAG interprets that under the NCP "User pays" system, landholders suffering cumulative mine-induced water depletion would be penalised by having to pay higher costs for reticulated water and by having to compete with Industry for cost and accessibility.

The Calliope River Water Resources Plan has been completed on the basis of surface and overland flow only. Groundwater has not been assessed despite wide recognition that perennial streams are sustained by groundwater, and despite the obligations of signatories to deal with interconnected systems as a single resource. Under water resource plans licences ultimately translate into allocations. Cement Australia has a licence to discharge 6 ML/d under ordinary circumstances and 10 ML/d under recharge conditions. Events are in train for the mine to ultimately receive a water allocation and become the legal owners of water intercepted from the underground aquifer. From the landholder's perspective such an allocation would be a misappropriation of rural community assets.

Alternatively, if the essential natural water resource system could be returned to pre-mining health, the impacts on landholders could be redressed, the dispute could end and meaningful co-existence with the mine begun. A negotiated settlement between all the parties remains the goal.

Mt Larcom township

Previous to the last couple of years, Mt Larcom township remained stagnated due to a lack of official endorsement, poor public perception of its investment climate, low real estate values and activity. Because of its lower socio-economic circumstances the town's population remained relatively stable due to location, commendable amenities and close proximity to well paid industrial jobs.

Since the release of the Mt Larcom Community Restoration Project Report of October 2003, support by State Development and a more pro-development attitude by Calliope Shire Council, has favourably influenced public perception, local values and real estate activity. The best illustration of this is the Council's recent development approval of 8 aged care units. This project sprung from:

- a CWA vision for aged care units
- from an economic workgroup committee chaired by State Development
- participation by Gladstone Area Promotion and Development Bureau
- involvement of an out of town developer
- broad community support

Additionally, in an increasingly competitive regional environment where future development opportunities seem likely to abound, discussions indicate Mt Larcom may share in some of the regional development. Development within the already populated centres of Gladstone, Boyne Tannum and to a lesser extent Calliope will obviously continue apace with Mt Larcom merely complementing such activity.

Mt Larcom is already responding to these increased stimuli. There is more evidence of community pride in individual homes and their presentation. Some long term residents formerly trapped by low real estate values have either sold into a rapidly appreciating market or restructured their investments. Investment by major developers has already occurred.

In the preparation of this submission we have had discussions with Calliope Shire Council and asked them for their forward projections on Mt Larcom township's water consumption in 10 year's time. Their response was that the forward projections depend solely upon the commercial development opportunities that may or may not occur in that timeframe. If development on the anticipated scale proceeds Mt Larcom could treble or quadruple its size

The prospective water pipeline from Rockhampton to Gladstone will pass close to Mt Larcom and would seem to offer another option for access and supply to the township.

Mt Larcom's present consumption is 0.3ML/day. As local citizens we think Mt Larcom in ten years could treble or quadruple its population of about 320 and its consumption of water could therefore be around 2 ML / day.

LIST OF ATTACHMENTS IN CHRONOLOGICAL ORDER

1. Extract from QCL's (now Cement Australia's) 1976 Special Conditions that remained in force until amended conditions at Lease Renewal in March 2003.

2. "Annexure "A", new Special Conditions set in place with Lease Renewal in March 2003, that are weaker than the original 1976 Conditions.

3. Re changes to the wording of the new Special Conditions.

4. Crown Law advice to DME dated 22 July 1996.

5. A3 Map of 33 sq km "Mine Impacted Area 2/2000 by company consultant Dr F Kalf.

6. FOI of EPA memorandum dated 22 October 2001 re decision that 1996 IAS/EIS findings still valid for QCL's 2002 EMOS and Environmental Authority for Lease Renewal.

7. "Detailed District Irrigation Usage compared to Mine Pump-out Figures and Revised More Informative Table A" by P Brady for EEMAG November 2001.

8. DNR&M Map of 170 sq km zone declared as blighted by the Land Court decision of 28 February 2002.

9. Presentation to Productivity Commission Inquiry Hearing on Impacts of Native Vegetation and Biodiversity Regulations by P Brady on 28 July 2003 re loss of approx 30 km of perennial creek flows allegedly due to mine dewatering.

10. Letter to EPA dated 10 October 2005 requesting advice on any alterations to Cement Australia's EMOS and/or Environmental Authority relating to their Mining Lease Application 80127, and EPA's response dated 21 October 2005.

11. EEMAG's notes from meeting at the East End mine on 2 November 2005.

12. Email from Joe Pappalardo DNR&M of 20 November 2005 thanking Alec for copy of EEMAG's notes from meeting on 15 November 2005, plus EEMAG's notes from the meeting.

13. Letter to Joe Pappalardo DNR&M dated 21 November being a submission on Compensation arising out of Injurious affection that was not dealt with prior to the East End mine's lease renewal in March 2003.

14. EEMAG's notes of recollections of meeting with EPA on 29 November 2005.

15. Letter from Noel Barker DNR&M dated 2 December 2005 requesting details of the essence of EEMAG's application regarding "Compensation arising out of Injurious affection."

16. Email from Jon Womersley EPA dated 6 December 2005, thanking Alec for the record of EEMAG's meeting with EPA, and attaching the file note EPA made of that meeting .

17. Fax to Noel Barker DNR&M dated 16 December 2005 attaching EEMAG's detail on the essence of "Compensation arising out of Injurious affection".

18. Letter from Noel Barker DNR&M dated 19 December 2005 advising that EEMAG's letter of 16 December 2005 re "Compensation arising out of Injurious affection" is being assessed by the Department. **Please note:** EEMAG did not receive any further response on this matter from DNR&M.

19. Letter to Joe Pappalardo dated 1 March 2006 requesting advice as to what relationship to the hydrology report currently being undertaken by Tim Jones of DNRMW have to the letter from the Office of the Minister for Environment dated 20 Feb 2006 that stated "I am also advised that the Department of Natural Resources, Mines and Water .... Continues to regularly review the information collected by Cement Australia on the draw down effect of the mine. The DNRMW has advised the Environmental Protection Agency (EPA) that there is no compelling evidence that these arrangements should be re-visited".

20. EEMAG's summary of our case in the Land & Resources Tribunal on 28/3/06, where we lodged objections against Cement Australia being granted an additional mining lease. The backlog of unresolved issues with the mines was presented in Affidavits, as were our objections on the basis that the Company's EMOS and Environmental

Authority are inadequate and inappropriate. EEMAG was ultimately forced to withdraw their objections without the objections being heard.

21. Letter from Joe Pappalardo dated 29 March 2006 response to EEMAG's letter dated 1 March 2006.

22. "Explanation of Water Loss and Its Value in the Mount Larcom District" by Peter Brady for presentation at Public Presentation at Mt Larcom 17 February 2007.

23. Letter to Hon Kevin Rudd MP dated 4 April 2007 (C/c to Peter Beattie) requesting his intervention to obtain a resolution to the dispute on the basis of his involvement as a Policy Advisor to the Goss Government when a support package was provided to the East End mine's tripling of production as a mechanism to get QCL out of Moreton Bay 3-5 years earlier than planned plus copy of Kevin Rudd's response dated 3 May 2007.

24. Letter to Mr Bob Reid, General Manager Sustainability, Cement Australia Sydney dated 20 April 2007, requesting that, in view of Groundwork Pty Ltd's long involvement in the dispute when an attitude of minimalist compliance prevailed, Allen Jermyn of Groundwork not be used in to conduct interviews with affected landholders, and requesting that landholders be given notice in advance of the proposed visits.

25. Letter from Bob Reid, Cement Australia, Sydney dated 1 May 2007 Advising that the company intended to continue to use Groundwork for interviews with landholders, and advising that making appointments has not worked very well in the past, and they intended to continue with unannounced visits.

26. Map May 2007 – showing approximation of depleted areas by EEMAG superimposed on DNR Map of Bracewell – East End Area Groundwater Investigation Geological Framework.

FPP + CPN
Except for MMP

REES R & SYDNEY JONES

SOLICITORS · EST 1864

Roger Baker LLM FTIA
Andrew Palmer BA LLB
Gerard Houlihan
Geoffrey O'Driscoll
Justin Houlihan LLB
George Cowan LLB Acc. Spec. (Pers. In
Paula Phelan LLB (Hons)
Stephen Fleming B Com LLB

Our Ref: 04-06-2856 (05)

25 May 2007

EIS Project Manager
Gladstone Nickel Project
Major Projects
Department of Infrastructure
PO Box 15009, City East 4002

Dear Sir/Madam

RE: LJ COWARD

I advise that I act on behalf of LJ Coward of "Fairview" Calliope and now enclose a copy of his submission.

I am awaiting copies of photographs of six mile creek which I will forward to you early next week in support of the submission.

Would you please acknowledge receipt of the submission and advise me of the date on which my client and I can meet with representatives of the department to speak in support of the submission.

Yours faithfully,

Andrew Palmer
andrewp@reesjones.com.au

Encl.

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SUBMISSION

To EIS Project Manager
Gladstone Nickel Project
Major Projects
Department of Infrastructure
PO Box 15009, City East 4002

I, LARRY JOHN COWARD of 51837 Bruce Highway, Calliope being the registered proprietor of land set out in the Schedule ("the Land"), do hereby make the following submissions in relation to the Environmental Impact Statement for the Gladstone Nickel Project:

1. Construction of the residue storage facility ("RSF") as part of the Gladstone Nickel Project will prevent the flow of surface water into Farmer Creek as a result my right to irrigate on the land using water out of Farmer Creek will be lost even though I hold water licenses to allow me to irrigate out of Farmer Creek.

   (a) I am the registered proprietor of the land, which in aggregation is known as "Fairview" Calliope;

   (b) The area north east of the Bruce Highway and north of "Fairview" is the main area of the catchment for Farmer Creek;

   (c) Farmer Creek is formed immediately north east of the Bruce Highway, to the north of "Fairview" and then travels in a roughly southerly direction through "Fairview" and into the Calliope River. Within "Fairview", Farmer Creek is a permanent natural source of water for used both for irrigation and for watering livestock.

   (d) Section 9.3.5 of the Environmental Impact Statement states that "no discharge from the RSF is anticipated under normal operating conditions." The Environmental Impact Statement makes it clear that the main embankment will be constructed to an initial height of 86 metres AHD but that there is a subsequent intended increase in the embankment height by approximately 15 metres to a height of 101 metres AHD. As a result of the construction of these embankments, all rainwater which falls onto the surface of the RSF and all local runoff will be captured and stored in the RSF.

   (e) In Figure 9.4.1, the direct rainfall onto the RSF and the local runoff is shown as being captured in storage and is the only intended discharge of the water is either through evaporation or for pumping back to the refinery for reuse. The Conceptual Water Balance Model makes no provision for the discharge of water under normal operating conditions by the spillway in the RSF.

   (f) As a result, the inflow into Farmer Creek of rainfall falling on the surface of the RSF or local runoff will be totally eliminated and the source of water flowing into Farmer Creek will be limited to runoff of that area of "Fairview" south west of the Bruce Highway. This represents a substantial reduction in the inflow of water into Farmer Creek.

   (g) At the present time, the water infrastructure installed at "Fairview" for irrigation and for watering livestock is as follows:

      (i) 3 small dams constructed in paddocks where there is no access to the Calliope River, Farmer Creek or Six Mile Creek;

      (ii) Permanent natural water in Farmer Creek;

(iii) Riparian rights to access water from the Calliope River.

(h) I currently hold the following water licenses:

(i) Water Licence 37290U- Licence to irrigate an area of 20 hectares of the land described as Lot 5 on RP601802;

(ii) Water Licence 45289U- Licence need to irrigate 80 hectares of the land described as Lot 4 on RP601802;

(iii) Water Licence 18101U- Licences to interfere with the flow of water in Farmer Creek by impounded water on or adjoining land described as Lot 4 on RP601802.

(i) As a result of the construction of the RSF and the interference with the flow of water from the catchment into Farmer Creek, the inflow of water into Farmer Creek will be drastically and devastatingly reduced and irrigation pursuant to the water licences will be impossible.

(j) At present there is permanent natural water in Farmer Creek as it flows through "Fairview". These permanent waterholes will be lost as the existing water is used or evaporates and the waterholes will not be replenished, as the inflow of water will be captured by the RSF rather than following down Farmer Creek. As a result, I will lose permanent natural water which is presently used to water livestock.

(k) The effect of the construction of the RSF and the capturing in that facility of water which would otherwise have run into Farmer Creek will deny me access to a permanent water facility in Farmer Creek for watering stock and for irrigation.

(l) Even though I have the right to irrigate pursuant to the water licenses this will not be possible because of the lack or inflow of water into Farmer Creek because it will be captured by the RSF.

(m) Because of the reduced inflow of water into Farmer Creek, I will be forced to either spend substantial amounts of money to construct alternative water infrastructure, if it is feasible to do so or I will have to substantially reduce the number of livestock depastured on "Fairview".

(n) The construction of the RSF and the capturing of water by that facility which otherwise would have flowed into Farmer Creek will destroy the permanent natural water in Farmer Creek and will prevent the conducting irrigation on "Fairview" which will have a substantial reduction in the viability to property and will substantially reduce the value of the property on the open market. At the present time the ability to irrigate on "Fairview" pursuant to the water licences and with permanent natural water in Farmer Creek is a significant factor in determining the value of "Fairview".

2. The discharge of excess water from the RSF will cause irreversible contamination in Farmer Creek and thus cause contamination of "Fairview".

(a) In Section 9.3.5 of the Environmental Impact Statement, it is stated that "the RSF design will include a spillway to allow controlled discharge of excess water, should it be needed under extreme climatic conditions." The discharge of excess water in extreme climatic conditions will discharge water directly into Farmer Creek.

(b) Water discharged from the RSF will be directed into Farmer Creek by way of the spillway constructed on the south-western end of the embankment.

(c) In Section 9.3.5 of the Environmental Impact Statement it is stated that "the RSF was assessed as a significant hazard dam according to the Department of Minerals and Energy Guidelines (1995 (a)) because of the potential for "significant" economic loss an environmental impact from the failure of the dam embankment".

(d) It is acknowledged by the Department of Minerals and Energy that the environmental impact and economic loss on properties downstream from the RSF would be significant. "Fairview" is the property downstream from RSF. I consider the impact both in economic and environmental terms of the discharge of excess water into Farmer Creek because of an extreme climatic event or because of the failure of the embankment would have an irreversible devastating impact on "Fairview" from which it could never recover.

(e) The discharge of water of contaminated water into Farmer Creek either because of an extreme climatic event of because of failure of the embankment would have or would cause contamination of Farmer Creek which would cause irreversible contamination for the whole of "Fairview" and would prevent "Fairview" operating as a cattle grazing property on as a property of which irrigation could be conducted.

3. The Environmental Impact Statement has not recognised or considered the impact of the construction of the RSF in the catchment of Six Mile Creek and the resultant impact it will have on "Fairview".

(a) Six Mile Creek runs from the area north of the Bruce Highway and north of "Fairview" under the Bruce Highway and into "Fairview", where it joins with Farmer Creek. A copy of a map entitled "Fairview Neighbourhood Catchment Incentive Scheme Project Map" is attached to identify the location of Six Mile Creek.

(b) The catchment and for Six Mile Creek is in the area north of the Bruce Highway and in the eastern section of the RSF.

(c) Details of the construction of the main embankment for the RSF, the subsequent raising of the embankment and the capturing of water within the RSF is set out in paragraphs 1(d) and (e) of this submission.

(d) As a result of the construction of the RSF, the inflow into Six Mile Creek of rainfall falling on the surface of the RSF local runoff will be almost completely eliminated. The only source of water flowing into Six Mile Creek will be rain water falling on that part of the catchment area which is south of the RSF.

(e) At the present time, there is permanent natural water within Six Mile Creek on "Fairview" which is relied upon to provide water for depasturing livestock.

(f) As a result of the construction of the RSF and the interference with the flow of water from the catchment into 6 Mile Creek, the inflow of water into Six Mile Creek will be drastically and almost devastatingly reduced and I will lose permanent natural water in Six Mile Creek which is presently used to water livestock.

(g) Because of the reduced inflow of water into Six Mile Creek, I will be forced to either spend substantial amounts of money to construct alternative water infrastructure, if it is viable to do so, or I will have to substantially reduce the number of livestock depastured on "Fairview".

(h) The construction of the RSF and the capturing of water by that facility which otherwise would have flowed into Six Mile Creek will destroy the permanent natural water in Six Mile Creek which will have an effect on the viability of the property and will substantially reduce the value of the property on the open market.

4. The construction of the RSF will have a devastating impact on Fairview both by denying the inflow of water into Farmer Creek which is necessary to enable to me to carry on irrigation and grazing activities or by causing irreversible contamination of Farmer Creek. The only reasonable way to compensate me for the damage which will be done to "Fairview" by the construction of the RSF is for the property to be purchased at market value, ignoring the impact of the proposed construction of the RSF, together with a premium to reflect the compulsory nature of the acquisition.

   (a) As demonstrated, the construction of the RSF and the denying of the inflow of water into Farmer Creek will devastate the permanent natural water in Farmer Creek which is presently used, under water licence, to irrigate and to water livestock;

   (b) The damage done to Farmer Creek as a result of the discharge of excess water in an extreme rainfall event or due the failure of the embankment would cause significant economic and environmental impact downstream and would irreversibly devastate "Fairview" and mean that it could not be used for irrigation or cattle grazing for the foreseeable future;

   (c) The construction of the RSF is to provide a commercial benefit to the Gladstone Nickel Project. The impact of the construction of the RSF on "Fairview" will be catastrophic. The only reasonable way in which the irreversible damage done to "Fairview" by the construction of the RSF is for the property to be purchased either by the Department of Infrastructure or by the proponents of the Gladstone Nickel Project. In determining the value of the property concepts simular to that used under the *Mineral Resources Act* should be employed. That is, the property should be valued at its market value, ignoring the impacts of the proposed construction of the RSF, together with a premium or an additional amount which should reflect the compulsory nature of the acquisition. I have not sought to sell the property and I will only be forced to sell the property because of the construction of the RSF;

5. I request the opportunity to meet with representors of the Department of Infrastructure and speak in support of this submission given the devastating impact which the construction of the RSF will have on "Fairview".

THE SCHEDULE

Description	***County***	***Parish***	***Area***	***Title Ref***	***Encumbrances***
Lot 11 on CP CTN923	Clinton	Mt Larcom	0.5625 Ha	30290163	Nil
Lot 1 on CP CTN923	Clinton	Mt Larcom	0.1861 Ha	30290159	Nil
Lot 2 on CP CTN923	Clinton	Mt Larcom	0.3035 Ha	30290160	Nil
Lot 3 on CP CTN923	Clinton	Mt Larcom	0.3844 Ha	30290161	Nil
Lot 4 on RP 601803	Clinton	Mt Larcom	0.4040 Ha	30560164	Nil
Lot 5 on RP 601803	Clinton	Mt Larcom	0.4040 Ha	30560165	Nil
Lot 6 on RP 601803	Clinton	Mt Larcom	0.4040 Ha	30560166	Nil
Lot 7 on RP 601803	Clinton	Mt Larcom	0.4040 Ha	30560167	Nil
Lot 8 on RP 601803	Clinton	Mt Larcom	0.4040 Ha	30560168	Nil
Lot 9 on RP 601803	Clinton	Mt Larcom	0.4040 Ha	30560169	Nil
Lot 10 on RP 601803	Clinton	Mt Larcom	0.4040 Ha	30560170	Nil

Dated this 24th day of May 2007.

LARRY JOHN COWARD

TN 113014.

CELESTINE TAYLOR
B.App.Sc 1990 G.D.U.R.P
0401 362 207

EIS Project Manager
Gladstone Nickel Project
Major Projects
Department of Infrastructure
PO Box 15009
CITY EAST Q 4002

14 April 2007

RE: Environmental Impact Statement

Dear Sir/Madam,

I have concerns over the quantity of **dioxins** to be released into the from the stacks proposed as part of the refinery process of the nickel and cobalt ores.

I am concerned with the impact the release of these dioxins has on air and terrestrial fauna and flora envisaged to be protected under the Environment Protection and Biodiversity Conservation Act 1999 Commonwealth (specifically sections 18 and 18A listed threatened species and communities) for instance the quantity of metals settling in water bodies frequented by wildlife.

In addition to this concern I am committed to negotiating and providing open space and protecting trees at every opportunity however I am not convinced that there are sufficient green spaces or regional tracts of open space acting as carbon sinks to absorb and offset the concentration of pollutants including those from this proposal in the Gladstone State Development Area a matter addressed in the State's CQ2010 project.

I anticipate consideration of the matters of metallic pollution and carbon sinks in the EIS and associated Terms of Reference.

Yours faithfully

C Taylor.

Celestine Taylor

29 Naples Avenue
Isle of Capri, Q, 4217