Comments Acland Stage 3 EA Amendment

QMDC comments on an application by New Acland Coal Pty Ltd for a Mining Lease and an amendment for Environmental Authority EPML00335713

1 July 2015

Submission to:

CoalHub@dnrm.qld.gov.au

Submitting organisation:

Chief Executive Officer
Queensland Murray-Darling Committee Inc.
PO Box 6243
Toowoomba QLD 4350
Phone: 07 4637 6276
Fax: 07 4632 8062
geoffp@qmdc.org.au

These comments are presented by the Chief Executive Officer, Geoff Penton, on behalf of the Queensland Murray-Darling Committee Inc. (QMDC). QMDC is a regional natural resource management (NRM) group that supports communities in the Queensland Murray-Darling Basin (QMDB) to sustainably manage their natural resources.

1.0 Background

QMDC has previously submitted comments on the New Acland Coal Pty Ltd (NAC) Stage 3 Expansion Project during consultation periods pertaining to the TOR, EIS, and Supplementary EIS. We have also commented on the *Regional Planning Interests Act*, the *Modernising of Queensland Resources Act, Greentape Reduction, Strategic Cropping Land* and *Environment Offs*ets legislation and presented to respective Senate Inquiries.

http://www.qmdc.org.au/publications/browse/78/policy-submissions

QMDC's CEO, Geoff Penton has also been a member of the State Advisory Committees for Strategic Cropping Land and the Darling Downs Regional Plan. QMDC therefore has a good working knowledge on how legislation past and present has approved mining and housing developments that have had an unacceptable level of environmental harm on the natural resources and social capital of the QMDB.

QMDC's knowledge base is informed by and includes the practical on ground experience, research, knowledge and wisdom of many farmers, soil and water scientists, extension officers, researchers, industry representatives, NRM managers, Traditional Owners and conservationists. Our community position on coal mining and this particular application is guided by our mining policy and the Regional NRM Plan (both currently being reviewed and updated).

http://www.qmdc.org.au/publications/download/1162/website-pdfs/qmdc-policy/qmdc_policy_mining-impacts-qmdb_revised111027.pd

http://www.qmdc.org.au/publications/browse/plans/regional-nrm-plan

QUEENSLAND MURRAY-DARLING COMMITTEE

2.0 General comments

QMDC objects to both the mining leases application and the application to amend the EA on the grounds that the Stage 3 Expansion project:

- Fails to uphold objects of Environmental Protection Act (EPA), Vegetation Management Act (VMA), Environment Protection & Biodiversity Conservation Act (EPBC Act), Nature Conservation Act (NCA) and the Regional Interests Planning Act (RIPA);
- Fails to provide confidence that the revised Environmental Management Plan (EMP) and its proposed management strategies and actions will adequately avoid and/or manage the environmental harm the Stage 3 Expansion project will create;
- Fails to meet the targets of the Regional NRM Plan;
- Fails to satisfy QMDC's mining policy;
- Fails to uphold Australian international biodiversity & climate change commitments;
- Fails to give effect to the State of Environment report findings http://www.ehp.qld.gov.au/state-of-the-environment/report-2011/pdf/executive-summary.pdf
- Fails to address major issues we raised in our comments on the Stage 3 Expansion Project EIS.

http://www.qmdc.org.au/publications/download/2132/policy-submissions-1/qmdc_comments_on_new-acland-coalmine-stage-3-expansion-project-eis.pdf

3.0 Specific comments

3.1 Environment Protection Act

The administering authority has a legal and moral obligation to protect Queensland's environment, which includes *(a)ecosystems and their constituent parts including people and communities; and (b)all natural and physical resources; and (c)those qualities and characteristics of locations, places and areas, however large or small, that contribute to their biological diversity and integrity, intrinsic or attributed scientific value or interest, amenity, harmony and sense of community; and (d)the social, economic, aesthetic and cultural conditions affecting the matters in paragraphs (a) to (c) or affected by those matters.*

QMDC argues that the Stage 3 Expansion project is not a development that *improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends (ecologically sustainable development).*

3.2 Vegetation Management Act

The administering authority must regulate and enforce vegetation clearing provisions. The Stage 3 Expansion project does not conserve remnant vegetation that is (i) an endangered regional ecosystem; or (ii)an of concern regional ecosystem; or (iii)a least concern regional ecosystem; and does not conserve vegetation in declared areas; and cannot ensure the clearing does not cause land degradation; nor prevent the loss of biodiversity. It certainly does not maintain ecological processes nor will it be able to wholly manage the environmental effects of proposed clearings to achieve the matters mentioned above. It increases greenhouse gas emissions; and prevents sustainable land use.

In the Condamine catchment, there are “nearly 2,000 flora species including 5 endangered, 32 vulnerable, and 34 rare species at state level. The proportion of remnant vegetation from original regional ecosystems ranges from 7 to 30% in the east to 25 to 50% in the west. Of this, up to 70% is classified as endangered or of concern in some parts.”

http://www.condamineallliance.com.au/our-wildlife

A total of 144.4ha of remnant vegetation under the Vegetation Management Act will be cleared, including three endangered areas, five areas of-concern and a single area of least-concern regional ecosystem (RE) (Coordinator General’s evaluation report on the environmental impact statement December 2014 (CG’s report)).

3.3 Environment Protection & Biodiversity Conservation Act

The Stage 3 project compromises the administering authority’s ability to uphold the objectives of the EPBC Act, because it does not protect the environment, especially matters of national environmental significance; it does not conserve Australian biodiversity; it does not enhance the protection and management of important natural and cultural places, it does not promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources; it does not recognise the role of Indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity, nor does it promote the use of Indigenous peoples' knowledge of biodiversity with the involvement of, and in cooperation with, the owners of the knowledge.

The Condamine Catchment provides the habitat for “an estimated 500+ native vertebrate animal species, including ten species considered as endangered: two frogs, four birds, one mammal, two reptiles and one butterfly. A further 21 species are considered vulnerable and 26 rare at the state level.” Four mammals and one bird species have been declared extinct.

http://www.condamineallliance.com.au/our-wildlife

The project will require clearing of eight endangered and of-concern regional ecosystems totalling 84 hectares (ha), 70.8ha for one flora species (Belson’s panic grass) and 19.5ha of habitat for the koala—matters of state environmental significance(MSES) under Queensland legislation (CG’s report).

Environmental issues facing the QMDB involve significant challenges and constraints for natural resource managers, landholders and developers. QMDC and the communities it works with in QMDB, recognise the need to protect now and in the future the region’s valuable natural resources from actual and potential threats and losses resulting from commercial development.

QMDB has already been significantly degraded as a result of past human impacts, and actions are required to reverse this trend. QMDC places limits on offsets so that they cannot be used to facilitate, or attempt to facilitate, a development outcome or allow development to proceed in areas which it would presently not be able to proceed.

When the project was allowed subject to environmental offsets, it was obvious to NRM Managers of the region that the Coordinator General FAILED to take into consideration not only the impacts of the New Acland Coal Mine's individual development but also the cumulative impacts, social, economic and environmental, of the total number of industries impacting on the environment and natural resource assets in the QMDB.

Compensating for significant residual adverse environmental impacts arising from project development **is not acceptable** because appropriate prevention measures should be taken first and foremost.

The project will result in the clearing of up to 24.6ha of brigalow and 40.1ha of bluegrass-dominant grasslands, both listed under the EPBC Act as endangered threatened ecological communities (TECs). In addition, up to 70.8ha of Belson's panic grass, listed as vulnerable, will be impacted (CG's report).

The environmental offset conditions will in our opinion fall short of fulfilling the bottom-line that offsets for residual impacts should achieve a social licence to operate, no net loss, and other net gains, e.g. biodiversity, water and soil quality, vegetation protection and regrowth with respect to species composition, habitat structure, ecosystem function and people's use and cultural values associated with environmental assets.

3.4 Regional Interests Planning Act

The Regional Planning Interests Act and the Darling Downs Regional Plan (DDRP) have identified the Stage 3 Expansion Project surrounds as an area of Queensland that is of regional interest because it contributes, or is likely to contribute, to Queensland's economic, social and environmental prosperity.

http://www.dilgp.qld.gov.au/resources/plan/darling-downs/darling-downs-regional-plan.pdf

The DDRP also operates to protect the Darling Downs regional features of both national and state environmental significance e.g. remnants of the Brigalow threatened ecological community, *Acacia harpophylla*, which is recognised as a Matter of National Environmental Significance (MNES). In addition, the MNES in the Darling Downs region include 81 threatened species, seven threatened ecological communities and 19 migratory bird species. The Darling Downs region also contains a number of Matters of State Environmental Significance (MSES) including 34 protected areas, various protected plant and animal species and a number of biodiversity offset areas. The DDRP recognises that despite the region's high biological values, loss of vegetation has been experienced across the region as a result of historical clearing for residential development and major industries including both agriculture and the resources sector.

The Stage 3 Expansion project is unable to give effect to the DDRP and RPIA because it compromises the environmental, economic and social values gained from biodiversity protection. It does not appreciate or realise the importance of this to the region. Protection of threatened ecological communities in the region must occur through planning and development decisions that appropriately reflect the natural biodiversity values of the area, with development being facilitated in such a way as to avoid impacts on biodiversity and remnant vegetation.

The state's interest in biodiversity is described in the State Planning Policy as follows:

> *matters of national and state environmental significance are valued and appropriately safeguarded to support healthy and resilient ecosystems and ensure the sustainable, long-term conservation of biodiversity and social, economic, cultural and environmental benefits it provides.*

Achieving this state interest in the region is supported by the appropriate management and protection of biodiversity assets through existing legislation (e.g. *Environment Protection and Biodiversity Conservation Act 1999* and *Nature Conservation Act 1992*), local government planning schemes and development assessment processes.

The policies contained in the DDRP are supposed to contribute towards the protection of strategic areas of priority agricultural land use from potentially incompatible resource activities like coal mining.To ensure the state's highly valued agricultural land uses are not lost as a result of growth in the resources sector in the region, the following regional policies give priority to those key agricultural land uses that have been identified within the region's strategic agricultural areas:

- **Regional policy 1** Protect Priority Agricultural Land Uses within Priority Agricultural Areas.
- **Regional policy 2** Maximise opportunities for co-existence of resource and agricultural land uses within Priority Agricultural Areas.

1,361ha of strategic cropping land (SCL) will be affected by the project works (CG's report).

The economic impact of this for local and regional agricultural businesses is not addressed adequately through the financial assurance or offset mitigation measures. There is also no redress through any payment through royalties as the mine is exempt by way of 1920's legislation.

This effectively increases the negative impact on national and international food security and is contrary to current federal and state agriculture policy.

The lack of protection afforded by this EA and mining lease application contributes to the detrimental cumulative impact on all strategic cropping land in Queensland, Australia and across the globe.

QMDC recognises that SCAs are a relatively new political invention and, as an organisation, we are worried by the progressive reduction in area protected resulting from legislative processes. This application does not protect both 'good quality' cropping lands. It has not involved a rigorous scientific or socio-economic process of investigation and assessment. The Stage 3 Expansion Project creates a piecemeal or 'swiss cheese' development ignoring the urgent need to protect discrete agricultural areas.

Although successive Queensland governments have identified the constraints of competition and finite resources, the willingness to implement legislation for the management of these constraints appears to have been put into the 'too hard' basket.

QMDC is of the view that unless these constraints are managed, the amended EA and *Regional Planning Interests Act* provisions will not succeed in protecting regional interests. The Coordinator General's conditions support the incremental loss of cropping land to the Stage 3 Expansion project. We assert this and the ongoing cumulative impact of CSG mining will inevitably reduce the area of land available for food production to sub-critical in the QMDB. Instead of increasing the value of agricultural production, the impacted agricultural area is only required by the Coordinator General's rehabilitation conditions "*to be able to support the best post-disturbance land use possible*." The development therefore permanently alienates rather than temporarily diminishes productivity.

This low threshold for rehabilitation for SCL has never been acceptable to QMDC and the agricultural communities it works with and for.

QMDC repeatedly asserts that prime producing agricultural areas need to be designated and protected from New Acland Coal Mine's competing land uses. Regional planning schemes provide a mechanism for the implementation of protection strategies, which allow the state government to take a lead in designating agricultural areas as agricultural areas of state significance. If the application is granted the current policy initiative such as the SCAs will act as a 'death by 1000 cuts' to the agricultural sector and does not provide the policy framework for future investment. Failure to address the need to constrain the Stage 3 Expansion project will de-base any regional attempts of sustainable productivity growth in the Darling Downs.

The failure to look at complete landscapes within which farming enterprises and farming families flourish, as well as a whole farm approach renders the RPIA and DDRP legislation, policy and regulation as a token gesture towards protecting agricultural land.

An avoidance principle should be clearly articulated so that all development must avoid impact on SCAs that diminishes its integrity including the natural resources it is dependent on, agricultural enterprise viability, landholder mental health and capacity, and community resilience.

Mitigation offsets proposed are not delivering 'like for like' SCL in context of the agricultural and ecological systems they exist within. This includes the functional landscapes and ecological systems associated with that SCA whilst also providing greater agricultural quality and quantity for the affected region. The size of the offset area should for example be larger than the area to be alienated for development if the SYSTEM is adversely impacted. The offset area must not be only a hectare measure but must also include the opportunity of increasing the capacity of agricultural systems including associated functional communities, landscapes and ecological systems.

QMDC has seen no assessments undertaken to determine whether mitigation measures proposed would have a positive and enduring social, economic, environmental effect for the region's agricultural viability and future capacity and liveability.

Clearly protecting priority agricultural areas will give agribusinesses, banks, farming families and communities confidence to invest in on-going intensification and optimisation of food production for the future.

QMDC argues, that the environmental performance and ethical social practices of the mining sector need to be assessed in terms of the burdens this sector place on regional communities, and the natural resources and ecosystems they rely on to sustain themselves.

QMDC asserts that this application if assessed on its merits will highlight that the degree of community advantage and public benefit is minimal, contrary to NAC's and the Coordinator General's claims.

A public benefit test although it poses many challenges, provides an opportunity for the Government to make basic human rights meaningful to regional communities so as to assure them social and economic justice, alongside environmental sustainability.

$219 million was given to the mining industry as part of the coal sector jobs package, and the additional subsidies the mining industry receives include:

- $2.35 billion in fuel subsidies (increased $458 million)
- $495 million in tax write-offs for capital works (increased $127.5 million)
- $550 million in deductions for exploration and prospecting (increased $220 million);

How much of the projected profits and the supposed economic benefits of the Stage 3 Expansion project are honest calculations? What percentage of these subsidies and additional government funding can be attributed to the Stage 3 project? Are Darling Downs local residents and other taxpayers contributing to the project unwittingly at the expense of taxes being available for health, education, environment and/or food security priorities?

The Acland Sustainable Energy Plan (the Energy Plan) has assessed the economic, social and environmental benefits from on-farm electricity generation and food production in Acland. It identifies that by upholding the regional policies to protect priority agricultural land and implementing a sustainable energy plan could provide farmers with a dual income and a sustainable future. Expanding NAC's coal mine on the other hand degrades the land potential, making it unsuitable for cropping and marginal for grazing.

Solar PV farming creates job opportunities by generating "about 1900 full-time equivalent (FTE) job years over the life of the system, both directly and indirectly." The Energy Plan showcases how combining solar PV farming with small crop vegetable farming on 1360 ha irrigated land, the land area for the Stage 3 mine proposal could provide about 180 full-time equivalent (FTE) direct jobs each year indefinitely from these activities (Vale et al, 2014). Additional jobs at Acland and its surrounds can be established through dry land cropping, grazing and tourism businesses.

The Stage 3 project estimates about 412 FTEs direct jobs each year during operation (EIS, Chap. 17, Table 17-12). These jobs however are only for 15 years and have the perverse outcome of job losses in other parts of the economy. The multipliers used by the mining companies to estimate indirect and induced jobs are highly disputed (Campbell et al, 2013).

The Energy Plan estimates that there is approximately 7 to 8 square kilometres (700 to 800 hectares) of cropping land across the Stage 3 project area with low slopes that could be suitable for solar PV farming. This is in areas of marginal soil in lots ranging from 0.14 to 2 km2 as identified by the Stage 3 IES and shown in figure 4 in the report.

"This area of land would allow for between 300 and 400 Megawatts (MW) of peak power capacity from solar PV farming. The solar arrays can be oriented to the west to assist with meeting the summer peak air conditioning demand on the electricity network. It is estimated that the annual energy generation output from about 360MW of solar PV farm is 566 Gigawatt-hours (GWh) for fixed solar arrays. Sun tracking solar arrays could increase this output by about 1.25 times." This amount of energy would provide for approximately *"70,000 average south east Queensland homes or twice that number of new well designed, energy efficient homes. According to the 2011 Census, there are 53213 houses in Toowoomba."*

http://profile.id.com.au/toowoomba/dwellings?WebID=10

It is estimated that capital investment of a large scale solar PV farm is between $500 and $800 million. It is envisaged that this could produce approximately $800,000 of income each year to land owners providing land to solar farm developers. This equates to about 750 ha of solar farm area or about $1100 per hectare per year. Additional revenue is likely between $113 million and $170 million each year which would accrue from the sale of electricity at retail rates of about 20 to 30 cents per kilowatt-hour.

NAC's mine is projected to benefit average household income across Queensland by about $2292 over 14 years or about $164 per year due to capital investment in construction and operation. This amount must be weighed up against a cost to Queensland households estimated at over $5000 per year due to State and Federal subsidies to the fossil fuel industry and environmental and social costs.

As well as electricity generation, cropping land potential area of about 2360ha is available across the proposed Stage 3 mine site. This is made up of 1360ha of irrigated land, using the water allocated to mine use, and 1000ha of dry land cropping. These areas are estimated to produce about 272 terajoules of gross or ingested food energy (GE), enough to feed about 70,000 people annually if eaten as unprocessed food as part of a mixed diet.

http://solarissustainablehomes.com.au/images/stories/presentations/reports/Acland_Sustainable_Energy_Plan_Revised_Long_Version.pdf

3.5 Likely Impact on Environmental Values

The NAC assessment of the likely impact of the proposed amendment on the environmental values, do not include an accurate description of the relevant environmental values. The application does not account for the (a) qualities or physical characteristics of the environment that are conducive to ecological health or public amenity or benefit or safety; or (b) other qualities of the environment identified and declared to be an environmental value under the RPIA, DDRP, EPBC Act, VMA environmental protection policy or regulation likely to be affected by the proposed amendment.

QMDC is concerned that a number of environmental values have been poorly assessed and technical reports and assessments have not been independently peer reviewed. Site specific and cumulative impacts on species recovery, groundwater systems, existing land users, "sensitive receptors", regional ecosystems etc are being underestimated or ignored.

QMDC argue that NAC is not providing true and accurate information on their actual or future water supply sources. The EIS identified that NAC currently relies on groundwater from the Great Artesian Basin (GAB) and rainfall for the supply of water to the mine. NAC has agreed to a contract with Toowoomba Regional Council (TRC) for the supply of up to 5500 ML per annum of treated effluent from the WWRF up until 2055. Actual use as per TRC records shows NAC are using only a proportion of that water.
http://www.toowoombarc.qld.gov.au/

QMDC does not support further depletion of groundwater by the Stage 3 Expansion project. The revised EMP refers to the need to continue sourcing from groundwater bores, both potable water and an emergency water supply. The recycled water from Wetalla Wastewater Treatment Plant, we believed was meant to increase reliability of supply and help 'drought proof' the project.

Groundwater modelling and projections is not addressed adequately and renders the application as posing to high a risk to this valuable resource for the agriculture sector, local domestic use. Additionally climate change impacts may seriously impede any make good arrangements that are supposed to mitigate drawdown impacts.

An international study released by NASA showing declines in groundwater resources globally should alert the administering authority to the urgent need to manage groundwater resources sustainably. Acland is not immune to the challenges posed from declining groundwater resources.

Two satellites, launched in 2002, are able to make detailed measurements of the Earth's gravity field in the Gravity Recovery and Climate Experiment (GRACE). The GRACE satellites have been used to monitor the impact of the Australian millennial drought on the Murray-Darling Basin (MDB).

"*The MDB accounts for about 30 per cent of the gross value of Australia's agricultural production. From 2001 to 2006, the total rainfall deficit (the difference between the actual volume of rainfall received and what would be expected in rainfall was the average) for the basin was estimated to be about 520 km^3. Using GRACE data Marc Leblanc and co-workers showed that there was an almost total loss of surface waters (lakes, rivers) within two years of the start of the drought but depletion of groundwater stores continued for six years or more after the start of the drought. Between 2001 and 2007, there was about 104 km^3 of groundwater lost from the MDB. The average annual loss of surface water and groundwater was 20 km^3 which is 150 per cent of the total water usage in a normal year. Despite rainfall rebounding in 2007 and 2008, the GRACE data showed a continued decline in groundwater storage.*"

This technology and study is providing, for the first time ever, large-scale assessments of the changes in total groundwater store within massive aquifers at monthly, seasonal, annual and inter-annual time-scales.

http://www.abc.net.au/news/2015-06-18/eamus-declining-groundwater-is-a-big-problem-for-australia/6556586

http://www.jpl.nasa.gov/news/news.php?feature=4626

Additional issues that require further attention are water supply activities e.g. dust suppression and associated environmental impacts that may arise due to the quality of water used.

The EMP fails to consider the health and habitat of fauna, the health and integrity of soil, vegetation and pastures, availability and suitability of groundwater for domestic use, the reduction of waste streams and resource recovery. All these should have been included in the stated environmental values.

3.6 Emissions or Releases Likely to be Generated by the Proposed Amendment

Forty-four sensitive receptors (43 homesteads and one business), are located within 10km of the mine. Around 40 homesteads are located within 5km of the project site. Four sensitive receptors (numbers 31 (a business), 32, 33 and 34 (homesteads)) will be located within 700m of the MLA (infrastructure) 700001, with the closest being a business located 400m from the line (CG's report).

Although rail related infrastructure has moved approximately 250m closer to some sensitive receptors, a revised air impact assessment by the Coordinator General was deemed not necessary. The proponent does not anticipate negative air impacts on any of the identified sensitive receptors located in close proximity to the rail spur and TLF (CG's report).

During operations, noise will be generated from the use of drilling rigs, excavators, loaders, and water and dump trucks; and from blasting, which will be the noisiest activity. Activities at the CHPP and use of conveyor systems may also be audible for people nearby. Up to 80 rail movements per week will occur when the mine is at peak production (CG's report).

Over the life of the mine, air quality will periodically change as a result of activities such as blasting, haulage, excavation works, and coal processing and stockpiling. During dry seasons (June–September), the concentration of airborne particulates from project and non-project activities in the area may be exacerbated due to low rainfall and, in the colder months, poorer atmospheric dispersion (CG's report).

Predicted exceedances in EPP (Air) objectives (CG's report).

QMDC believes the environmental values of the air environment to be enhanced or protected under the EMP should also include those qualities that are conducive to suitability for regional ecosystems, including flora and fauna habitat. Stock health must also be included. It is difficult to see how the EMP will enhance the air environment when many coal mining activities are re-known for their detrimental impacts on the air environment e.g. dust, blasting, Greenhouse gas (GHG) emissions. The fact that there are current and predicted future air quality exceedences makes a mockery of the stated environmental value and puts into question the integrity of the EMP.

QMDC continues to argue Scope 3 GHG emissions need to be included in the corporate responsibilities of NAC. Climate change is a global problem and a mining business such as NAC operates in a global environment. The risks and opportunities associated with GHG emissions span national borders.

The GHG Protocol Corporate Standard classifies a company's Scope 3 GHG emissions as all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.

http://www.ghgprotocol.org/files/ghgp/public/FAQ.pdf

Most of the largest companies in the world now account and report on the emissions from their direct operations (scopes 1 and 2). The GHG Protocol standards close the GHG gap: businesses can now act on the full range of corporate value chain and product emissions as well. Emissions along the value chain often represent a company's biggest GHG impacts, which indicates, companies have been missing out on significant opportunities for improvement. Kraft Foods, for example, found that value chain emissions comprise more than 90 percent of the company's total emissions.

http://www.ghgprotocol.org/files/ghgp/public/FAQ.pdf

Developing a full GHG emissions inventory – incorporating corporate-level scope 1, scope 2, and scope 3 emissions – would enable NAC to understand their full value chain emissions and to focus their efforts on the greatest GHG reduction opportunities.

Other businesses have found that developing corporate value chain (scope 3) and product GHG inventories delivers a positive return on investment. The GHG Protocol standards would assist both the government and NAC to:

- Identify and understand risks and opportunities associated with value chain emissions;
- Identify GHG reduction opportunities, set reduction targets and track performance;
- Engage suppliers and other value chain partners in GHG management and sustainability;
- Enhance stakeholder information and corporate reputation through public reporting.

Through these activities, NAC can reduce emissions and costs to meet strategic business objectives. Government and NAC cannot manage what they can't measure. Climate change is a complex and worldwide problem, therefore, decisions about how to reduce emissions, need to be based on facts rather than assumptions. Scope 3 standards provide an essential foundation for strategic thinking about reducing emissions. They would allow NAC to identify the biggest "hot spots" in their value chain, those activities that generate the most emissions. This insight would allow NAC to focus on achieving the most meaningful reductions, not only from within their operations, but across global value chains.

The EMP fails to consider key parameters required to protect watercourses when conditioning releases. QMDC is alarmed by the number of mine affected water release points and sources as per Table F5 (EIS). The EMP fails to consider the cumulative impact if all these dams release mine affected water.

Surface run-off after treatment may still cause environmental harm depending on its composition or quality. Re-use must not lead to environmental harm. Monitoring twice annually for heavy metals, nutrients, anions and cations is not enough to ensure environmental harm is not occurring.

QMDC is not confident that the storage design for dams containing hazardous substances is considering future climate projections for the region.

The base and walls of the Tailings Storage Facility, sediment dams and environmental dams must be constructed, installed and maintained to **prevent** the likelihood of a release of contaminants.

3.7 Risks and Likely Magnitude

QMDC asserts the known characteristics of all contaminants, including their physical and chemical properties and reactivity of the contaminants; the biological, carcinogenic, mutagenic or toxic properties of the contaminant; the variation of the concentration, emission rate or flux over time, of the contaminants is not well understood in relation to the both environment and economic factors such as the nature, variability and threshold limits of the receiving environments, the risk of flooding, drought, extreme weather events, bioaccumulation and cumulative impacts, market vagrancies and profitability of the mine etc.

The EMP fails to address the water quality data exceedences in Tables 3-14 and 3-15 (EIS). Are these exceedences due to mining related activities, if so what will prevent further exceedences?

The EMP fails to put in place appropriate control strategies to prevent mining activities where exceedences are known to occur. A commitment must be made upfront to avoid exceedences at the first instance, claiming that non-compliant activities “may” be restricted is not acceptable.

Claims that drawdown of the water table, mining and dewatering activities will not have a detrimental impact, and contamination to groundwater is unlikely must be supported by peer reviewed evidence.

Drawdown at the project site may be up to 47m. Beyond the project site, the drawdown contour of around 1m in depth may extend across an area of around 21km in diameter. Within the area of drawdown in and around the mining area, 357 registered bores may be affected (CG’s report).

The EMP fails to measure performance against adverse changes to groundwater quantity. It fails to appreciate the need to sample groundwater bores and creeks for metals, metalloids, nutrients and hydrocarbons.

NAC states that the revised Project “is considered to have a low vulnerability to climate change”. This statement flies in the face of current climate impacts in the region and CSIRO’s future regional, and national climate projections.

http://www.climatechangeinaustralia.gov.au/en/climate-projections/future-climate/regional-climate-change-explorer/sub-clusters/?current=CSC&popup=true&tooltip=true

If the operational separation distance of 150m from the mining pits to Lagoon Creek falls within the PMF, will the likelihood of flooding render operations around the pits a major hazard?

Transferring and depositing mine affected water to other structures and areas is not acceptable. Liability and responsibility should remain with NAC and the risk to contaminate other areas prevented. Who will be responsible for ongoing monitoring if water moved off mining site?

3.8 Management Practices Proposed To Be Implemented To Prevent Or Minimise Adverse Impacts

QMDC maintains its original argument that the EMP "does not provide adequate details on the actions and procedures to be carried out during the construction and operational activities in order to show how NAC will avoid or mitigate adverse impacts." The proposed mitigation, management measures, and environmental commitments do not establish a reliable framework to ensure the most appropriate measures are being implemented during each stage of the Project. In effect, this means the revised EMP cannot be relied upon to protect environmental values.

The impacts caused by the development of elevated and depressed landforms and the management of those impacts is not well considered or planned for especially in relation to future water flows and the floodplain. Management actions within the EMP do not address:

- Whether changes to topography will have a detrimental impact on the surrounding land e.g. will the predicted lakes have the potential to flood?
- What is the likely hydro-chemical evolution of the pit lakes?
- What the long term quality of water will be in these lakes?
- What long term impact salinity increases in these lakes will have?
- Whether there will be groundwater seepage?
- Whether elevated landforms will create localised wind conditions through a tunneling type effect?

QMDC asserts the surface water management philosophy for the revised project is not based on best floodplain management practices nor is it informed by up to date climate projections for the region. Owing to this lack of consideration the EMP's management actions and strategies are inadequate especially in regards to the diversion of surface water.

The EMP shows no understanding of the need to promote a greater correlation between floodplain management and land use planning (and coordination of runoff/flow across the catchment). This correlation and coordinated control needs to recognise the multiple functions of a floodplain, including the natural flow of water across the catchment and floodplain. Identification of risks and hazards is also necessary to determine what natural and human assets are at greatest risk and which strategically require the greatest protection, for example, aquatic ecosystems, strategic cropping land, endangered vegetation, community health infrastructure etc

In the Darling Downs floodplains, development or construction should be restricted on lands which will result in the alteration of flows and which require levee banks or bunding to protect that development or construction from floods.

QMDC assert impacts caused by a design flood are not only caused by bunding or levee bank failures or overtopping but also because of the fact that water is diverted by bunding, levee banks or incorrect or poorly designed earthworks. Environmental impacts should also be acknowledged alongside economic damage and loss of life.

QMDC believes activities to divert, and construct flood bunding need to also consider on-property impacts to assess whether soil erosion may occur resulting in increased levels of turbidity which may have downstream impacts.

QMDC asserts the government needs to address economic risks in terms of acceptable outcomes from the proposed Stage 3 Expansion project. We believe it is paramount that the government protects economic investment by not allowing businesses and industries to develop in high risk areas. If a levee bank or flood bund, for instance, is built to protect an investment, that development needs to be assessed against other businesses or industries situated on the floodplains, and whether they are put at a higher risk because of the levee bank or flood bunding construction.

QMDC maintains its original argument that the EMP "does not provide adequate details on the actions and procedures to be carried out during the construction and operational activities in order to show how NAC will avoid or mitigate adverse impacts." The proposed mitigation, management measures, and environmental commitments do not establish a reliable framework to ensure the most appropriate measures are being implemented during each stage of the Project. In effect, this means the revised EMP cannot be relied upon to protect environmental values.

NAC states that the production rate of the mine is "dependent on geological, technical, financial, statutory approvals and market factors and may vary throughout the remaining mine life." QMDC has not seen any evidence from well-designed local studies that are capable of accurately quantifying these influences and what run on affect they will have on both site specific and cumulative health, social, environmental and economic impacts. This renders the proposed environmental management planning for Stage 3 inadequate because changes in production rates may throw out a range of other key calculations e.g. the likelihood of more air quality exceedences, an increase in need for water, the need for emergency water releases etc.

This EMP has not considered whether increases in the concentration of all constituents in the void lakes due to evapo-concentration escalates risks and hazards that require substantial monitoring over hundreds of years. Johnson and Wright note that "in situations where net evaporation greatly exceeds precipitation, this can result in dramatic increases in total dissolved solids content to produce saline to brine water bodies, particularly where surface inflow to the pit is largely restricted to direct precipitation. The generation of relatively dense, saline water at depth and periodic addition of fresh rainwater to the surface layers can result in a stratified water body. The water quality of pit lakes that develop in sulphide-rich rocks deteriorates with increasing acidity, dependent on the amount of lime-rich rock available to neutralise any acid-generating material. However, mine voids in oxidised rock that contain appreciable carbonate often have better quality and neutral pit lake water."

The prediction of final water quality and quantity in mine voids is a challenge that must be better addressed by this EMP especially if these void lakes remain in the landscape forever.

3.9 How the Land the Subject of the Application will be Rehabilitated after each Relevant Activity Ceases

The rehabilitation of affected land must be able to support the best post-disturbance land use possible (CG's report).

NAC proposes to return the majority of the land to grazing. The loss of SCL and its rehabilitation to "*the best post-disturbance land use possible*" **is not acceptable.**

The combined area for the Willeroo, Manning Vale East and Manning Vale West pits is estimated at 1,201ha. The final void areas would total around 457ha, with depths of between 40–70m (CG's report).

QMDC appreciates that it is difficult to predict long-term water quality. The prediction of water-quality evolution in mine voids requires the EMP to address the hydrogeological, limnological and biological/biochemical processes that control solute fate and transport quality.

QMDC argues that NAC have not presented models to adequately account for all of these processes.

A major long-term concern is the potential for the void lakes to become point sources of hypersaline water with a detrimental impact on the surrounding groundwater resources. If the annual rainfall is low and high evaporation is experienced over the region, this rainfall deficit, will contribute to the development of hypersaline water bodies. Final mine voids that form 'groundwater sinks' will become progressively more saline. A long-term concern is the down gradient movement of saline plumes from 'throughflow' mine voids, which can extend large distances and potentially impact on other groundwater resources. The limited data from NAC and monitoring data from other mine sites in Western Australia demonstrate that the salinity of the void lakes can increase significantly.

NAC must not leave the region with a legacy of mine voids. There are numerous safety issues that must be addressed as part of mine closure, including a thorough assessment of the potential long-term environmental impacts of mining below the water-table. The mine void issue should be vitally important to both the Government and mining industry, as liability for rehabilitation or stabilisation of a mine void may remain over a period of decades, centuries, or possibly even millennia.

QMDC argues that mine voids are problematic in floodplains. They also pose risks because of the region's hydrogeological environments. This revised EMP does not provide community with the confidence, that these problems will be overcome through any innovative approaches taken by NAC. This EMP has in our opinion not correctly approached the mine voids in terms of the landscape they are situated in and has therefore not provided adequate management strategies that eliminate the environmental risks or hazards associated with depressed landforms and void lakes.

QMDC is concerned that NAC's undertaking to monitor and test at its facilities and other locations (including the 'monitoring of implementation of specific environmental management plans and procedures, regular inspection of construction and operational activities, environmental monitoring of impacts over time, reporting and analysis of regulated discharges, emissions and waste disposal as well as any other prescribed monitoring in accordance with the conditions of the relevant environmental authority') is not going to meet performance criteria and objectives in relation to environmental impacts with measurable indicators and standards.

QMDC asserts that some of that concern is based on NAC not providing sufficient data on eco-toxicity and bioaccumulation risks, potential for environmental contamination with persistent heavy metals, salt, explosives and other contaminants such as radioactive substances.

Land contamination management requires NAC to apply a wide range of actions and strategies to avoid potential contamination including natural disaster and catastrophic events from infrastructure or plant failure and/or operational accidents or failures. Analyses of risks, sampling and monitoring must, in QMDC's opinion, be regular and mandatory, not discretionary and dependent on assumptions.

NAC have failed to carefully evaluate the Project's plant or infrastructure sites, designs and operations for the worse case contamination scenario and its consequential impact on all regional and local development, businesses and natural resources.

Soil contamination may be a source of contamination for groundwater, surface water and air. Baseline soil monitoring, pro-active operational soil monitoring, and timely management of contaminated soils are recognized environmental approaches to protect soil and related resources.

Remediation costs often increase sharply when soil contamination spreads to other resources. The EIS does not provide community the assurance that the soil resource and associated environmental media are protected.

In QMDC's opinion the objectives of site investigations as well as the contents of a report need to be articulated by NAC. These objectives should be to:

- identify sources of substance releases from the Project before they result in significant contamination to the soil resource;
- ensure actions are identified to eliminate or control the sources of soil contamination and prevent or reduce the risk of contaminant transfer from impacted soils to other environmental media (air or water) or potential receptors; and
- ensure timely assessment, management and reporting of all contaminated areas associated with approved development and projects and reduce the environmental impact associated with development approvals in Queensland.

QMDC also believes that NAC have not demonstrated satisfactorily how well they can resource the level of monitoring required because of the risks and hazards integral to this Project and because of the number of additional permits and approvals required. Limitation of water resources must be recognised within the EMP and an environmental best practice planning framework.

The Stage 3 Expansion project has not proven the “opportunities” it offers are without inherent risks and impacts that will push the region’s water resources beyond their capacity and threshold limits.

In accordance with section 203 of the EPA, the EMP fails to provide the following:

- section 1 – a description of all elements of the Project , potential adverse impacts on the environmental values likely to be affected by mining activities, and other key information to allow the administering authority of the EPA to decide the application and conditions to be imposed on the EA.

Consequentially the lack of key information means sections 2, 3 and 4 will only capture some aspects of the Project fail to address:

- section 2 – how the environmental protection commitments and objectives are to be measured and audited against missing key elements of the Project, this includes control strategies needed to ensure the objectives are achieved
- section 3 – the relevant rehabilitation objectives and does not identify rehabilitation indicators against the environmental protection objectives required and absent in section 2
- section 4 – the indicators described in section 3 which vary for different parts of the land that have different types of disturbance.
- Issues supporting our above assertion are:
- incomplete evaluation of the water quality of all mine water management structures to determine their hazard category for regulation purposes
- lack of development of a groundwater monitoring program
- lack of evaluation of pre-development surface water quality to determine appropriate discharge limits and receiving environment trigger values
- incomplete information on the stability of the material to be disposed of in the Project’s spoil dumps for regulation purposes.
- lack of detail regarding the locations of monitoring points
- insufficient detail regarding receiving environment monitoring program
- water management plan does not address current drought threats nor demonstrate long term management actions for groundwater draw down (issues described in more detail below)
- waste management plan does not address adequately ongoing contamination issues
- spoil disposal facility operational plan does not provide adequate detail or data
- lack of residual void investigation
- land suitability for uses post-mining will lead to a loss of agricultural production and there is only a commitment to a partial return to productive grazing
- not met over-riding need for the Project in terms of broader public benefit that would accrue as a result of new employment, training, increased economic activity, taxes, royalties and other charges associated with the coal mine development
- rehabilitation requirements have not minimised the loss of SCL or GQAL and that NAC’s rehabilitation strategy cannot be successfully implemented on affected land.
- insufficient information was provided in relation to the proposed size of the Project development area footprint. These are matters essential to demonstrate the proponent’s ability to achieve its rehabilitation objectives
- insufficient information was provided to undertake a full appraisal of the stability of the project’s spoil dumps , including the proposed dewatering method and flow-ability of the dewatered fine coal tailings

- insufficient information was provided to undertake a full appraisal of the proposed method of mixing dewatered fine coal tailings and coarse rejects with mine overburden spoil
- lack of data to assess whether the operational plan will ensure best practice and reduce impacts on sensitive receptors, including the landform development stages of the spoil disposal facility and the placement technique for spoil and waste material from the CHPP on the mine site
- surface water quality, including levels of selenium and other metals, to determine appropriate discharge limits and receiving environment trigger values
- water quality of dams to determine the hazard category for each, and the appropriate design storage allowance and mandatory reporting level
- Project's relationship to the Regional NRM Plan, Condamine Catchment environmental values report, Balonne Resource Operations Plan
- real rainfall data to adequately assess the appropriate design storage allowances for the mine's water management system. Rainfall modelling requires a minimum 100 years rainfall generation model to adequately determine the hydraulic conditions of the Project site, which would subsequently determine the appropriate design storage allowances for the mine's water management dams
- potential surface water impacts including floods and contamination of rainfall run-off with sediment and salts from spoil dumps; contamination of run-off from other areas of disturbance (including rehabilitation and infrastructure areas) with sediment or elevated salinity contamination from grease, oil and fuel spills
- reduced water flows entering the local drainage systems due to capture of rainfall run-off in mining pits
- management of potential surface water releases as a result of the construction or operation of the proposed mine; including contaminant release limits, release contaminant investigation levels, receiving environment monitoring, receiving waters contaminant trigger levels, and receiving environment monitoring program.

3.10 Proposed Measures for Minimising and Managing Waste

Waste management proposed actions raise many questions and concerns:

- Will the disposal of concrete in a waste rock dump be appropriate in terms of potential hazardous chemical reactions between compounds in the concrete and waste rock?
- Why can't general wastes excluding unrecyclable plastic and paper be composted on site?
- How long will waste oil and containers be stored on site?
- What is the quality of separated water from oily water sources and what hazardous compounds and chemicals may bioaccumulate in the sediment dams? Will these compounds evaporate?
- Where will waste oil containers be drained on site and how will this be managed?
- What options to recycle tyres rather than dispose them to spoil dumps have been fully explored?

QMDC asserts that waste management must consider on site and off site impacts of all potential and likely contaminants.

Effluent, for example, contains valuable resources, such as organic matter and nutrients. It also can contain concentrations of chemical contaminants, salts and pathogens. These may be potentially detrimental to soils or plant growth. Some may pose a risk to the wider environment or public health. Determining effluent quality is vital to waste management conditions. Generally effluent contains dissolved mineral salts, including sodium, calcium, potassium, magnesium, boron, chloride, sulphate, carbonate and bicarbonate. Most salts are present in effluent as dissolved ions (charged particles), which can conduct an electric current.

Effluent can often contain significant concentrations of organic and inorganic nutrients; for example, nitrogen and phosphate. Where these nutrients are present in effluent, they could potentially be used as fertiliser when the effluent is irrigated for agricultural purposes. The concentration of pathogens will also affect effluent quality.

Depending on the concentrations of mineral salts, nutrients other potential contaminants, effluent is classified into high, medium or low strength. The classification of effluent for environmental management can be found in Table 3.1 'Classification of effluent for environmental management' in DECCW'S environmental guideline, *Use of effluent by irrigation* (DEC 2004).

www.environment.nsw.gov.au/resources/water/effguide.pdf.

Determining the effluent's quality is also important to ensure that its application is proven to benefit both:

- soil and plant growth; and
- will not harm the quality of the soil, ground or surface water.

Conditions must be based on knowing the quality of effluent as this should determine the design of the effluent irrigation system including the level of treatment needed, the land area required for irrigation, the plants that may be grown and the appropriate application rates. Comments: The key factors governing the suitability of a site for irrigating effluent are:

- topography (land conditions and land slopes);
- soil considerations;
- proximity of surface and groundwater;
- climate;
- land-use conflicts (proximity of neighbours); and
- availability of sufficient land for irrigation.

Ideally, a site chosen for effluent irrigation has the following qualities:

- a uniform slope of no more than 10%;
- permeable, well-drained soil;
- adequate depth to groundwater (for increased protection of groundwater); and
- is not prone to frequent flooding.

http://www.ampc.com.au/site/assets/media/reports/Resources/RES_Effluent-Irrigation-environmental-best-practice-manual.pdf

Disposal on site or off site be rejected if the above factors have not been thoroughly considered, e.g. if topography of the designated area will lead to run off and off site impacts.

Irrigation for dust suppression could potentially lead to adverse impacts on surrounding soils and waterways, human, stock and fauna health through the spread of pathogens. Waste management actions are not providing stringent control measures for sewage disposal.

The application of effluent proposed may result in the leaching of salts from the groundwater table.

Disposal requires proven scientific and technical solutions that assure there are no new site specific or cumulative environmental and socio-economic impacts.

Infrastructure and associated industrial operations associated with disposal of sewage should be defined against specific criteria and limitations that mitigate the risks associated with:

- storage
- transport
- destination, and
- cumulative and long-term impacts.

Conditions need to also recognise the importance of threshold limits in relation to any of the region's natural and agricultural resources that may be impacted upon in the future by proposed disposal.

Continuing concerns over acid mine drainage requires new improved management practices to guarantee long-term control. Inactive tailings impoundments and the long-term effects of windblown dispersal, ground water contamination, and acid drainage require similar attention.

QMDC is concerned that the costs of remediation may be considerable, exceeding the costs of NAC's original design and operation of the tailings impoundment. Actual designs for tailings disposal are highly site-specific. Design will depend on the quantity and the individual characteristics of the tailings produced by NAC's mining and milling operations, as well as the climatic, topographic, geologic, hydrogeologic and geotechnical characteristics of the disposal site, and on regulatory requirements related to dam safety and to environmental performance.

We are concerned that what may work for one type of tailings may not work for another type, and may not work for the same tailings at different sites. We assert that each situation requires its own design process. The estimated quantity of tailings to be disposed of is particularly important given the evolving nature of NAC's mining project, especially when tailings quantity estimates are based on estimated reserves that change continuously as mine development progresses. Accordingly, the final size and design of tailings impoundments can differ substantially from initial projections. This we believe presents major challenges to the administering authority, who is faced with reviewing and overseeing tailings impoundment planning, design, and performance, and to the public and local communities, who may ultimately pay for miscalculations resulting in environmental damages.

Seepage evaluation requires in depth information to be provided by NAC on components from geologic, hydrologic, and hydrogeologic studies, and physical and chemical characterizations of surface water inflows, seepage, and tailings.

The geologic factors affecting seepage such as fractured rock, clay lenses, and uplifted geologic formations can create large differences in permeability. Hydrologic data will be affected by rainfall intensity, soil type, and surface conditions. It is unclear whether data is available to calculate infiltration rates, and if so what is telling NAC about the risks of seepage contamination.

QMDC is concerned that the application has not provided adequate hydrogeologic studies that can determine: (1) the critical path and degree of anisotropy of the ground water, (2) the boundary conditions for ground water flow evaluations, (3) the moisture content, permeability, and porosity of the tailings and underlying soil, (4) the thickness of the unsaturated zone and capillary fringe, and (5) the storage capacity, hydraulic conductivity, and transmissivity of the tailings and underlying aquifer.

Additionally the chemical composition of tailings seepage is important in determining potential environmental impacts. Factors need to include waste characteristics such as mineralogy of the host rock and milling methods used to produce the tailings, and the interaction of the tailings seepage with the liner (if any) and the subsurface.Contaminant mobility can be increased by physical mining processes such as milling (a small grind results in increased surface area for leaching). Mining processes manipulating pH and using chelating agents to extract minerals from the ore are consequential to the fate and transport of contaminants in tailings. While many heavy metals are hydrophobic with strong adsorption tendencies for soil, the chemical reagents used in mining processes may be present in the tailings material. They are able to desorb the metals, making them mobile in leachate or surface waters.

Contaminated water may be formed from downward migration of impoundment constituents or ground water movement through tailings. Most contaminant transport in ground water systems is from the advection (fluid movement and mixing) of contaminants. Factors affecting the rate of advection include ground water/leachate velocity, chelation, pH, and partition coefficient values. The geochemistry of the aquifer, physicochemical properties of the tailings and seepage will determine the buffering capacity of the soil, types of chemical reactions (precipitation or neutralization) and the rate of adsorption and ion exchange.

QMDC is not satisfied that seepage quality modelling has been fully considered, including a peer review. If, for example, neutralization, oxidation/reduction, precipitation adsorption, ion exchange, and biological reactions play a major role in the chemical composition of tailings seepage, how does this play out when many of the same reactions are used in milling operations to free the desired mineral?

How can community be assured that NAC's options for controlling contaminated water in impoundments or capturing it after it exits the impoundment are adequate?

Liners have only been incorporated into tailings impoundment designs since the last two decades. QMDC are concerned that due to their high cost, NAC will tend to avoid the use of liners under an impoundment or pick a cheaper option. Slimes, for example are sometimes used as low permeability barriers. Areal coverage needed for the impoundments is a major cost consideration, especially for cross-valley dams. Thicknesses vary depending on the liner type but most thicknesses can be decreased if they are overlain with a drainage system to collect fluids, which reduces the hydraulic head (and stress) on the liner.

An underdrain or vents may be necessary to remove sub-grade vapors that might otherwise lift the liner and to prevent ground water infiltration into the tailings. Liners have to be resistant to constituents in the tailings and seepage (such as acids or caustic substances), weathering if exposed to ultraviolet radiation, deformation from loading stresses, and seismicity.

http://www.epa.gov/osw/nonhaz/industrial/special/mining/techdocs/tailings.pdf

Waste management strategies proposed do not:

- provide clarity and certainty because thresholds limits are not defined for those natural resource and rural assets that will be impacted e.g. soil, vegetation, agricultural land;
- fully identify risks and the potential impacts caused by activities and infrastructure integral to the disposal of sewage;
  help to identify whether the activity will live within identifiable threshold limits;
- require the capacity of soil and vegetation to store or utilise to be measured regularly to guarantee the proposed quantity of sewage can be disposed or stored;
- implement a full risk assessment;
- address cumulative impacts;
- consider bioaccumulation of contaminants and long term contamination legacy; and
- address off-site impacts.

Below are some key impacts not fully considered:

- Spread of pathogens - carriage of the micro-organisms inherent in sewage treatment plant operations and the co-relation to the surrounding wind and air conditions has not been fully considered within the conditions.
- Increase in noise, dust, lighting, odour impacts - air quality must be maintained at a level that protects human and environmental health from harm caused by dust, noise, vibration, excessive lighting and toxic gas emissions. Air quality must be measured against individual site specific and cumulative impacts from all operations and infrastructure associated with the disposal of sewage.
- Specific baseline ambient air quality monitoring needs to be conducted over the development area and before the commencement of disposal activities and operations in order to establish a baseline by which air quality can be measured to address current and potential impacts on human and flora and fauna health.
- Direct impacts from activities on air quality by construction and operational activities where dust, noise, vibration, lighting, gas emission impacts will cause human and environmental harm to flora and fauna and domestic stock.
- Movement of contaminants through environment - bioaccumulation of contaminants in soil, water or vegetation need to be considered with regards to the movement either through natural processes, human error or disposal of contaminated vegetation, or soil.

4.0 Recommendations

4.1 That the administering authority, refuse to allow the amended EA and mining lease applications.

4.2 That the administering authority, apply all the mechanisms afforded by federal and state legislation to protect in perpetuity the strategic cropping and good quality agricultural land of the Darling Downs.

4.3 That NAC be required to work with local communities, to transition current employees dependant on the Stage 3 project expansion for income, into viable employment in the renewable energy, manufacturing, agriculture, natural resource management and other sectors.

4.4 That the administering authority upholds *Section 34 EPA* and gives effect to environmental protection policies that avoid further destruction of remnant vegetation, MNES, regional ecosystems, habitat and biodiversity.

Submitted by:

Geoff Penton (CEO)
Queensland Murray-Darling Committee Inc.
P.O. Box 6243
Toowoomba West
QLD 4350

Ph: 07 4637 6276
Fax: 07 4632 8062

www.qmdc.org.au