Richmond Valley Power Station
and
Casino Gas Project

Part 3A Environmental Assessment
Project Application 06_0217

Submission Report &
Revised Statement of Commitments

February 2010 Rev 1

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1 INTRODUCTION

1.1 OUTLINE OF THE PROJECT

Metgasco Limited (ABN 24 088 196 383) (the Proponent) is proposing the first stage of development of natural gas resources, both coal seam methane (CSM) and conventional gas, in the Casino area and to use the resultant gas supply for a purpose built nominal 30MW power station. The power station will deliver electrical power into Country Energy's local grid providing a locally generated source of electricity within the Richmond Valley region. This development comprises two projects known as the Casino Gas Project (CGP) and the Richmond Valley Power Station (RVPS) (hereinafter collectively referred to as the Project). The Project only addresses development of the Casino gas resources sufficient to meet the requirements of the RVPS. Any further gas development in the region will be the subject of separate environmental assessments as and when circumstances dictate.

The CGP is a development involving gas extraction from the Walloon Coal Measures and deeper conventional gas reservoirs in northern New South Wales (NSW). The Proponent is seeking approval of a Petroleum Production Licence (PPL) for an approximately 1495.8 hectare area in the south eastern portion of PEL16 to further develop this resource.

The CGP involves the drilling and establishment, from 15-20 locations, of approximately 40 CSM production wells and/or 15 conventional gas wells, installation of a buried gas gathering system to transport the gas to the RVPS and a water collection system involving buried water pipelines and evaporation/storage ponds.

The RVPS will nominally comprise 10 x 3 MW reciprocating gas engines occupying an area of approximately 2 ha within a 4m earthen flood proofing bund; the total area being 4ha. The proposed RVPS site is a portion of the existing Lot 35DP755627 approximately 3km south east of Casino, off the Casino-Coraki Road. Lot 35 DP755627 will be subdivided, as part of the Project, to enable acquisition of the land by the Proponent (refer also to Section 2.4.2 of this document). The RVPS may be constructed in total or in three stages of approximately 10MW per stage depending upon contracted loads. Staging of the RVPS would enable the power station development to progress in line with the gas field development.

1.2 PURPOSE OF THIS REPORT

The RVPS and CGP has been declared a Major Project under section 75B of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act). An Environmental Assessment (EA) for the project has been prepared by Metgasco and was released for public comment from 22 August 2008 to 22 September 2008.

This document has been prepared by Metgasco in response to the Director-General's letter S06/00305 by which the Director General required, in accordance with section 75H of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act), that Metgasco respond to the issues raised during the public exhibition period for Richmond Valley Power Station and Casino Gas Project.

This report provides Metgasco's response to submissions focusing on the issues raised and providing the revised Statement of Commitments for the Project.

2 SUBMISSIONS SUMMARY

2.1 OVERVIEW

A total of 8 submissions on the Project's Environmental Assessment were forwarded by the Department of Planning to Metgasco in respect of the Project. A copy of the submissions received from public authorities is provided in Attachment 2. Submissions were received from 3 government agencies:

- Department of Primary Industries;
- Department of Environment and Climate Change (formerly Department of Environment and Conservation);
- Richmond Valley Council

In addition, 5 submissions were also received from landholders associated with the project land and/or local to the area. To protect the confidentiality of those submissions, copies of the submissions have not been included in Attachment 2.

The following section provides a summary of the key issues raised by each submission followed by a response from Metgasco.

The Statement of Commitments provided in the EA has also been revised, based on feedback provided in the submissions and the Final Statement of Commitments is provided in Section 3 of this document.

2.2 DEPARTMENT OF PRIMARY INDUSTRIES

2.2.1 Reserves Verification

The Department of Primary Industries (**DPI**) submission on the EA stated that the "DPI cannot support the Casino Gas Project component of this Application until it is supplied with the required resource information to demonstrate the project's economic viability necessary to warrant the grant of any future PPL."

The DPI noted that in their input to the Director General's requirements for the project their comments stipulated that *"consideration of the grant of a petroleum production licence for stage one gas field development will be dependent on Metgasco demonstrating, to the satisfaction of the DPI, sufficient coal seam methane gas resource and flow rate data to sustain supply to the proposed power plant".*

Metgasco Response

As outlined in Section 3.2.1 of the EA, The RVPS will require approximately 2.3PJ per annum of gas to power the full 30MW power station at an anticipated average 90% plant availability. Over the 15 year life of the Project this would therefore require 34.5PJ of gas reserves.

Metgasco has carried out an extensive exploration effort in PEL 16 including the drilling of a number of wells close to and within the area of the proposed PPL. As a result of this exploration effort Metgasco has established independently certified 3P (Proven, Probable and Possible) reserves of 1,538PJ, 2P (Proven and Probable) reserves of 298PJ and 1P (Proven) reserves of 2.7PJ. This is already a significantly larger quantity of reserves than would be required over the full 15 year life of the power station.

There is significant effort associated with separately proving up and/or independently certifying reserves within the boundaries of the proposed Petroleum Production Licence (PPL) when those reserves are not likely to be required by the power station for 5, 10 or 15 years or at all. Commercial reality dictates the adoption of a prudent approach to the establishment of a particular level of independently certified reserves specific to the small area of the proposed PPL prior to development of the project. The exploration undertaken by Metgasco has already established more than sufficient commercial gas reserves for the full 30MW power station for the whole of the 15 year life. The results from the exploration wells in adjacent areas is sufficient to give Metgasco confidence that the required quantities of gas are available within the boundaries of the PPL and can be developed over the timeframe necessary to satisfy the demand of the power station.

Metgasco is unaware of any provision in the Petroleum (Onshore) Act 1991 (**POA**) or any other legislative requirement which mandates a minimum reserves requirement as a prerequisite for the granting of a PPL. We also note that it is not practice within other state or federal jurisdictions to impose a requirement that reserves necessary to support the full life of a proposed project are defined or independently certified prior to the grant of a production licence or lease.

Notwithstanding our observations above, Metgasco has continued discussions with the Department (now Industry and Investment NSW) and provided the Department with additional information on the reserves and resources available within the proposed area of the PPL. Table 1 shows the total gas reserves/resources which are currently known to exist within the proposed area of the PPL.

Table 1: Reserves

		PJ	Status	Basis of Estimate
Coal Seam Methane[1]	OGIP[2]	113	Based on independent certification	Independent Certification
	Possible	37.7	Based on independent 3P certification	Independent Certification
	Probable	7.8	Based on independent 2P certification	Independent Certification
	Proven	Nil	Independent certification not requested	
Conventional Gas[3]	OGIP (Pmean)	47	Confidential internal assessment. Independent certification not requested	Testing of Riflebird 14 and seismic coverage
	Possible	Nil	Independent certification not requested	
	Probable	Nil	Independent certification not requested	
	Proven	Nil	Independent certification not requested	

Notes:

1. The certification associated with these reserves does not include the IJ and K seams which were identified subsequent to the certification.
2. OGIP Estimated Original Gas in Place.
3. Additional exploration drilling and testing is currently being carried out at Kingfisher which is likely to increase these reserves.

At Metgasco's most recent meeting with Industry and Investment (formerly DPI) on 15 December 2009 the department (Mr Brad Mullard) advised that, in light of the further information provided by Metgasco, they no longer had any objections to the project and Metgasco understand that they would separately advise the Department of Planning of this position.

2.2.2 Evaporation Storage Dams

Issue – Exclusion of Dams from PPL

DPI requested that the proposed evaporation storage dams be excised from any subsequently proposed PPL application to ensure that planning approval can effectively manage water interactions between the RVPS and evaporation dam facilities including the management of dehumidification water and runoff water.

Metgasco Response

The bulk of the water to be discharged to the evaporation storage dams is produced as an integral part of producing the gas from the reservoir and is part of the petroleum production process.

Similarly any water condensed from the gas in the field gathering system is also part of the petroleum production process. In addition any water condensed from the gas to make it suitable for transport or use would also be considered as part of the petroleum production process.

However, in the case of this project, dehumidification of the gas at the inlet to the engines involves heating of the gas to raise the temperature of the gas above the dewpoint and will not result in an additional water load on the ponds.

Normally uncontaminated run off would be disposed to the general environment; however in order to meet the philosophy of zero water discharge from the CGP and RVPS it is proposed to discharge all runoff water to the evaporation ponds.

Since almost all water delivered to the evaporation storage dams will arise as part of the petroleum production process, Metgasco believe that the ponds should be included within the Petroleum Production Lease.

Issue – Staging of Evaporation Storage Dams

The DPI also considers the approach proposed by Metgasco to build the evaporation storage ponds in stages as production water volumes are confirmed to be highly speculative. DPI requested further detailed water balance and modelling information to ensure the dams are of sufficient capacity to manage the expected production water volumes. The DPI also requested that the flooding implications on the evaporation dams be addressed.

Metgasco Response

A detailed water balance on which the sizing of the ponds has been based is contained in Appendix D of the EA. The water production forecasts used in the balance have been provided by the reserve certifiers to Metgasco (MHA Petroleum Consultants of Denver) using standard industry production simulators.

However, initial water production rates from the pilot wells have generally been substantially lower than the forecast and as there is no other historical data available from wells in the production area it is considered prudent to adopt the staged approach.

The impact of the bunded areas on flooding in the area is addressed in Section 8 of Appendix G Hydrogeology Report which concludes:

Based on the results of hydraulic modelling, the proposed bund wall surrounding the power station is unlikely to have any significant impact on flood levels on the Richmond Valley Floodplain.

2.2.3 Rehabilitation

Issue – Identification of Final Land Use

The DPI has requested that the rehabilitation section of the EA identify final land use, clear rehabilitation objectives for the project and conceptual completion criteria that can be used as an effective measure for rehabilitation success.

Metgasco Response

Future land use for the RVPS is described under EA section 6.9.3 Land Use

These areas will be managed to ensure that no long term land contamination occurs and so that the land can be rehabilitated to its current agricultural purposes at the end of the Project life.

And EA section 3.2.5 Rehabilitation and Restoration

At the end of the well life, (i.e. ~ 15 years), the well is plugged and abandoned in accordance with DPI requirements. .....

Any excavation and pits are filled and the site is restored to enable the predevelopment land use to recommence.

And in Table 4.1

The land will be returned to its predevelopment state after the wells are no longer in production and no fragmentation of rural holdings is proposed.

Restoration of land accessed under an Access Agreement with the title holder (such as well sites and access roads constructed as part of the Casino Gas Project) is covered in Table ES3 of the EA Executive Summary and Section 8 of the EA Summary of Commitments - refer to the line “Land Resources and Land Use”. Future land use is then at the discretion of the titleholder.

Performance Criteria for Clean up and Restoration, Dismantling of Above Ground Infrastructure and Site Rehabilitation are included as part of Sections 7.5.1, 7.6.1 and 7.6.2 of the Draft Environmental Management Plan CGP-Z-DOC-001-0 included in Appendix B of the EA.

Issue – Grass Species

The DPI recommends that grasses used in rehabilitation should be locally occurring species and species recommended and preferred by landholders. Common couch and paspalum var. are useful selections. Narok or Solander Setaria are recommended over Nardi. Bank stabilisation could be assisted by Rye grass in the winter or Millett in the summer.

Metgasco Response

These recommendations on grass species will be included in our rehabilitation policies.

2.2.4 Number of Wells

Issue – Precise Number of Planned wells

The DPI commented that it is desirable that the precise number of planned production wells and convention wells be clarified in order for any project approval to have clear limits.

Metgasco Response

As stated in the EA, there will be up to 40 wells for the Casino Gas Project, established from 15 to 20 locations. The wells will generally be CSM production wells, but may include up to 15 conventional gas wells.

Gas production forecasts from individual wells have been provided by the reserve certifiers to Metgasco (MHA Petroleum Consultants of Denver) using standard industry production simulators.

However, as there is no existing long term production history from wells in the coal measures that will be accessed by the Casino Gas Project it is not possible at this stage of the Project to calculate the precise number of wells that will be required. It is also not realistically possible to predict the performance of each well 10 to 15 years in the future to enable a forecast of the final number of wells required.

Unlike conventional gas reservoirs, the coal measures from which the gas is extracted are not homogeneous and considerable variability is expected across the area of the proposed PPL. This variability will mean that each of the wells is likely to perform differently making it difficult to be specific as to the actual numbers of wells required.

2.2.5 Agricultural Issues

Issue – Compatibility

The DPI noted that from an agricultural land perspective the EA is considered to be satisfactory and that the Project would appear generally compatible with local agricultural production, though some agricultural land will be alienated by the related infrastructure. The DPI highlighted the following from the EA:

- Locating wells near fence lines and tree lines will assist to reduce the impact of the wells on routine farming operations;
- Consolidating the location of the power station and evaporation basins will assist to reduce the footprint of these land uses;
- Undertaking property access, capping and rehabilitation in consultation with landholders should assist to address individual property level concerns.

Metgasco Response

The comments on the compatibility of the Project and support for measures outlined in the EA are noted.

Issue – Depth of Pipelines

The DPI had indicated that the pipelines should be buried at a depth (recommended minimum 750mm) and clearly marked in a manner that is to the satisfaction of landholders so as to not pose a risk to persons or farm management operations.

Metgasco Response

The majority of the gas lines between the wellheads and the power station will be operating at pressures of approximately 70 kPa and the burial depth for the gas and

water lines will be selected depending on the surface activities conducted in the area. In areas subject to cultivation or heavy traffic, pipelines will be buried deeper than in areas where interference is unlikely.

All lines will be installed in accordance with an applicable Australian Standard and AS3723 *Installation and Maintenance of Plastic Pipe Systems for Gas* is one of the appropriate standards. Under this Standard where little or no interference is expected safe burial depths are considered to be 300mm.

Again marking of the lines will be dependent on the surface activities and may involve markers and posts; but as a minimum marker tape will be installed over the gas lines in accordance with AS3723.

2.2.6 Waste Management

Issue – Drilling Muds

The DPI has requested that drilling muds be contained rather than disposed of to pasture or buried on farm land unless it can be shown to be beneficial to pasture/crops or will not leave any adverse soil residue.

Metgasco Response

Metgasco does not propose to dispose of used drilling muds to pasture, but rather dispose of the excess fluids from within mud pits to pasture i.e. upon completion of drilling, solids in the mud pits will be allowed to settle and then the pit will be de-watered. Note, this practice will only occur where a mud pit is required. In other circumstances, the drill rig has self contained mud tanks, and mud pits are not required.

Metgasco will amend Table ES-3 and Section 8 Summary of Commitments as follows:

Where mud pits are required, excess water from the mud pits will only be disposed of by irrigation to pasture where:

- *Potassium chloride (KCl) concentration in the mud sump is less than 25,000 ppm; and*
- *Other TDS including sodium chloride (NaCl) is less than 5000 ppm; and*
- *It can be shown to be beneficial to pastures/crops and will not leave any adverse soil residues; and*
- *The landholder agrees.*

As outlined in the EA, in other cases, excess fluid from within the mud pits will be removed by a licenced waste contractor to an approved waste disposal facility.

With regard to the drilling cuttings, the EA stated that *only firm drill cuttings, with near neutral pH, and hardened cement slurry residue will remain in the drill pits, if used. Any drill pits will be backfilled and remaining cuttings covered with at least one metre of soil. Back filled pits will be compacted and left mounded to provide for future subsidence. A layer of topsoil will be spread across areas disturbed by pit excavation.*

This method of backfilling and restoring of mud pits is standard practice in the petroleum industry.

Issue – Water Usage

The DPI requested that water from the dewatering process that is deemed suitable for stock or agricultural use should be comprehensively tested for suitability and then only used for these uses if compliant with the relevant water quality criteria.

Metgasco Response

The EA proposes that all water obtained from the dewatering process is disposed of in the evaporation ponds. While Section 6.4.1 of the EA did identify that the water was consistent with the quality required for stock water and discussed potential beneficial uses for water, Metgasco has not proposed alternate uses of this water at present. Upon any request from a landholder, the water from the evaporation storage ponds will be comprehensively tested and compared against the relevant ANZECC Water Quality Guidelines for the proposed use before any decision is made on alternative use.

Section 6.4.1 of the EA noted that *this (the potential alternate uses) is only a potential scenario, and the pond design proposed in the EA clearly meets the zero water discharge design philosophy. Further investigation and applications for any necessary amendments to approvals will be undertaken if a commercially viable beneficial use option is identified.*

2.2.7 Weed and Pest Management

Issue – Giant Parramatta Grass

The DPI recommended that the pipeline routes and associated work sites be checked for the presence of Giant Parramatta Grass and referred the proponent to their website for references to articles on the management of this pasture weed.

Metgasco Response

Appendix B of the RVPS and CGP Ecological Assessment (Appendix H to the EA) identified the presence of several pest species in the proposed Petroleum Production Lease area; but did not identify the presence of Giant Parramatta Grass. Metgasco will continue to inspect work areas for the presence of weed species including Giant Parramatta Grass.

Issue – Biosecurity Requirements

The DPI has identified that any mining, drilling or plant and equipment brought in from overseas is to comply with all relevant AQIS biosecurity requirements and be free of soil and plant matter.

Metgasco Response

Noted. Import of plant and equipment will comply with all customs requirements including the AQIS biosecurity requirements.

2.2.8 Consultation

The DPI has noted that Director-General's Requirements indicated: "You must undertake an appropriate and justified level of consultation with the following parties during the preparation of the EA (NSW Department of Primary Industries)". The DPI considers that the proponent has not undertaken an appropriate level of consultation with the DPI in the preparation of this EA.

Metgasco Response

Metgasco both directly and through its sub consultants had substantial interaction with various departments of the NSW Department of Primary Industries during the preparation of the EA. Metgasco are happy to discuss any additional concerns that the Department may have with our submission and have met with the Department in this regard.

2.2.9 Watercourse Crossings

The DPI has requested that watercourse crossings for the pipeline, wells or access ways be designed cognisant of 'fish friendly' principles and consistent with national fish friendly guidelines. Reference to the relevant guidelines and DPI key contact was provided.

Metgasco Response

The only watercourse within the PPL is Oakey Creek, which intersects the north section of the PPL. This is a minor watercourse and only intermittently contains water. Metgasco notes the above guidelines and will ensure that crossings of Oakey Creek are designed in accordance with these guidelines.

2.2.10 General

Metgasco has provided the DPI with the above information and met with the Minister and the DPI on a number of occasions to discuss the above issues, including:

- 2nd March 2009
- 27th March 2009
- 27th July 2009
- 15 December 2009

As noted in Section 2.2.1 above, at Metgasco's most recent meeting DPI advised that in light of the further information provided by Metgasco, they no longer had any objections to the Project.

2.3 DEPARTMENT OF ENVIRONMENT AND CLIMATE CHANGE

2.3.1 Air Emissions

The Department of Environment and Climate Change (**DECC**) notes that the Proponent commits in the body of the EA to meeting the NOx stack emission limit of 450mg/m3 and ground level concentration of 246ug/m3, but the Statement of Commitments only includes the later limit. DEC requests that the Commitment be revised to include both limits.

Metgasco Response

The recommended additional commitment has been accepted by Metgasco and the Statement of Commitment has been updated accordingly (refer to Section 3 of this document).

2.3.2 Noise Emissions

Issue – Construction Noise Limit

DECC notes that while Metgasco have committed to a construction noise limit of 50 dB(A) (based upon the Environmental Noise Control Manual – in relation construction works of less than 4 weeks duration) for all construction activities including drilling. DECC believe that this limit is inappropriate as the total construction period (time to

drill all the wells) will exceed 4 weeks and drilling will occur 24 hours per day. The DECC believes that a more appropriate construction noise commitment would be to not exceed background noise levels by more than 5dB(A) i.e.35 dB(A).

- *Noise from all construction activities at the premises including drilling of gas wells will not exceed an Laeq(15 mins) noise level of 35dBA and an Lamax noise level of 45 dBA measured at the nearest residence*
- *All construction activities will be limited to:*
  - *Monday to Friday 7am - 6pm*
  - *Saturday 8am - 1pm if audible on residential premises otherwise 7am to 1pm*
  - *No construction work will take place on Sunday or Public Holidays*
  - *24 hour drilling only Mon-Fri excluding public holidays and only if complaint to noise limits*

Metgasco Response

The noise control criteria provided in Section 6.5.3 (Regulatory Limits – Noise Control Criteria) of the EA is summarised and expanded upon in Table 2.

Table 2: Noise Control Criteria

Activity	Criteria	Basis
Operational Activities	Not to exceed L_{Aeq} 35dB(A), between 10pm and 7am, when measured in front of bedroom windows of the nearest residences.	*NSW Industrial Noise Policy* – criteria for intrusiveness (Background + 5dB(A))
Construction activities of less than 4 weeks	Not to exceed $L_{A10,\ 15\ min}$ 50 dB(A). Limited to: • *Monday to Friday 7am - 6pm* • *Saturday 8am - 1pm if audible on residential premises otherwise 7am to 1pm* • *No construction work will take place on Sunday or Public Holidays*	*Chapter 171 of the Environmental Noise Control Manual* Background + 20 dB(A) for construction jobs of less than 4 weeks
Construction activities up to 26 weeks duration.	Not to exceed $L_{A10,\ 15\ min}$ 40 dB(A). Limited to: • *Monday to Friday 7am - 6pm* • *Saturday 8am - 1pm if audible on residential premises otherwise 7am to 1pm* • *No construction work will take place on Sunday or Public Holidays*	*Chapter 171 of the Environmental Noise Control Manual* Background + 20 dB(A) for construction jobs of 4 weeks to 26 weeks
Construction activities greater than 26 weeks duration *.	Not to exceed L_{Aeq} 35dB(A). Limited to : • *Monday to Friday 7am - 6pm* • *Saturday 8am - 1pm if audible on residential premises otherwise 7am to 1pm* • *No construction work will take place on Sunday or Public Holidays*	*NSW Industrial Noise Policy* – criteria for intrusiveness (Background + 5dB(A))

** Criteria not specifically stated in the EA.*

Section 6.5.4 of the EA stated that as drilling of each well was expected to take less than 4 weeks, the noise criteria of 50 dB(A) should apply. Metgasco acknowledges that this does not take into account the proposed 24 hour aspect of the drilling activities.

Selection of the appropriate noise control criteria should be addressed separately for each phase of the activities. In general there will be a construction phase followed by an operating phase and both of these phases will be divided into activities associated with the individual well sites and activities associated with the power station site. The

bulk of the construction activities will be completed prior to operation of the facility; but some short duration construction activities associated with drilling and completion of wells to maintain the required gas production will be carried out over the life of the project.

The EA provides for 15-20 well locations with a maximum of 45 wells over the project life of 15 years. The number of wells drilled as part of the initial development will be less than 20 with the remainder drilled over the subsequent life of the project. The drilling sequence is approximately 20 in the first year with around 2 per year in subsequent years. Prior, or subsequent to the drilling of a well, there is a short period of construction activity associated with the installation of well head pumps and facilities and construction of water and gas flowlines.

Therefore the phases of the project that should be considered in setting the noise criteria are:

1. Construction associated with the power station and the site;
2. Drilling of the wells and construction of wellhead facilities and flowlines associated with the initial development;
3. Subsequent drilling of wells and construction of wellhead facilities and flowlines required to maintain the gas supply;
4. Minor construction or major maintenance works associated with the wells, flowlines and power station subsequent to the initial installation;
5. Operation and minor maintenance of the power station, and
6. Operation and minor maintenance of the wells, wellhead facilities and flowlines.

Some construction activities, including drilling, may need to be carried out on a continuous basis or outside standard hours. These activities can include:

- Hydrostatic testing of completed pipework;
- Construction/repair of flowlines where they cross roads or access tracks;
- Activities associated with connections or modifications to the electricity transmission grid;
- Transport or lifting of large items of equipment;
- Works as part of a flood or emergency management plan; and
- Drilling

Metgasco proposes the following noise criteria for each of the above phases of the project.

Construction associated with the power station and the site

As this is expected to take longer than six months the works should be assessed in accordance with section 4 of the 2009 *Interim Construction Noise Guideline* (section 4) issued by the Department of Environment and Climate Change NSW. This is summarised in Table 3.

Table 3: Noise Criteria

Recommended Standard Hours Monday to Friday 7am - 6pm Saturday 8am - 1pm No construction work on Sunday or Public Holidays	Management Level $L_{Aeq, 15\ min}$ RBL+ 10 dB	*Section 4.1.1 of the Interim Construction Noise Guideline*
	Highly noise affected 75 dB(A)	*Restricted hours approved by the relevant regulatory authority*
Outside Recommended Standard Hours	Management Level $L_{Aeq, 15\ min}$ RBL + 5 dB	*Section 4.1.1 of the Interim Construction Noise Guideline*

Where the Management Levels set out in Table 3 are exceeded all feasible and reasonable work practices will be applied to reduce the $L_{Aeq, 15\ min}$.

No other sensitive land uses have been identified adjacent to the proposed area of the site

Drilling of the wells and construction of wellhead facilities and flowlines and subsequent minor construction or major maintenance works

This covers items 2, 3 and 4 listed above.

The drilling and construction of wellhead facilities and gas and water flowlines does not occur at the one location. Of necessity the well locations are distributed so that gas can be effectively drained from the coal seam or gas reservoir. Typical density for the wells is 1 per km^2. There is no one group of people who would be affected by multiple well sites and therefore the duration of construction works associated with drilling should be counted separately for each group of people affected by the noise arising from that particular activity. What is important is the duration a person (a residence) is exposed to noise from construction works associated with the project, not the total duration of construction works associated with the project.

The drilling of wells is a construction activity that introduces a number of complexities not associated with surface construction activities. Most of the drilling activity occurs at depths of 500 metres to 2,500 metres below the surface which introduces a series of unknowns. These unknowns mean that drilling practices incorporate a significant number of additional safety practices not normally adopted for surface construction where any risks are more obvious. These practices require that once potential gas or water bearing horizons are intersected continuous drilling and circulation is maintained until these zones are permanently isolated or made secure by other means. For this reason it is necessary to carry out drilling activities on a continuous basis.

The number of wells drilled as part of the initial development will be less than 20 with the remainder drilled over the subsequent life of the project. The drilling sequence is approximately 20 in the first year with an estimated 2 per year in subsequent years. Prior to or subsequent to the drilling of a well there is a short period of construction activity associated with the installation of well head pumps and facilities and construction of water and gas flowlines.

The approximately 20 wells that are to be drilled as part of the initial development are spread over the PPL so each drilling site should be considered as its own construction site. Since there is no one group of people who would be affected by drilling on multiple well sites, this and the subsequent drilling of approximately 2 wells per year would constitute short term works which should be assessed in accordance with section 5 of the 2009 *Interim Construction Noise Guideline*.

As well as the actual drilling there are the following activities associated with the construction of a well site:

- Establishment of access tracks for the wells;
- Installation of gas and water flowlines;
- Installation of surface production facilities
- Other temporary earthworks;
- Workover of wells; and
- Fraccing

Installation of flowlines, water lines and access tracks are transient in nature (travel at 3-400m/day) and the duration of these activities at any particular location will be less than 4 weeks and the activities can generally be limited to daytime.

Workovers of any particular well are generally expected to take less than 1 week.

Metgasco proposes that all these above activities be assessed in accordance with section 5 of the 2009 *Interim Construction Noise Guideline*.

Operation and Minor maintenance

This covers items 5 and 6 listed above.

Metgasco proposes that the following criterion applies:

Activity	Criteria	Basis
Operational Activities	Not to exceed L_{Aeq} 35dB(A), between 10pm and 7am, when measured in front of bedroom windows of the nearest residences.	*NSW Industrial Noise Policy* – criteria for intrusiveness (Background + 5dB(A))

The report by Pollution Control Consultancy and Design (PCCD) included as Appendix F of the EA states that night-time measurements of Background Noise levels close to residences surrounding the proposed Richmond Valley Power Station were carried out on 17th/18th May 2006. The results of those measurements show that the Background Noise level in the area may drop to below 30 dB(A). In accordance with the New South Wales Industrial Noise Policy the lowest Background Noise level for the purpose of Criterion of Intrusiveness is therefore set to 30 dB(A).

The revised noise limits proposed for the CGP and RVPS are provided in Table 4.

Table 4 : Revised Noise Limits

Activity	Noise Limit	
	Monday to Friday 7am - 6pm ***Saturday 8am - 1pm***	**Other times**
Casino Gas Project - Construction		
CGP – Flow line, water line & access track construction	Assessed in accordance with section 5 of the *Interim Construction Noise Guideline*	Assessed in accordance with section 5 of the *Interim Construction Noise Guideline*
Well Drilling	Assessed in accordance with section 5 of the *Interim Construction Noise Guideline*	Assessed in accordance with section 5 of the *Interim Construction Noise Guideline*
Well Workover	Assessed in accordance with section 5 of the *Interim Construction Noise Guideline*	Assessed in accordance with section 5 of the *Interim Construction Noise Guideline*
Casino Gas Project – Operation		
Gas Well Operation	RBL + 5dB(A)	RBL + 5dB(A)
Richmond Valley Power Station –		
Construction	Assessed in accordance with section 4 of the *Interim Construction Noise Guideline* (Management Level RBL + 10dB(A)) Highly noise affected 75 dB(A) Restricted hours approved by the relevant regulatory	Assessed in accordance with section 4 of the *Interim Construction Noise Guideline* (Management Level RBL + 5dB(A))
	Where the Management Levels are exceeded all feasible and reasonable work practices will be applied to reduce the LAeq, 15 min.	
Operation	RBL + 5dB(A)	RBL + 5dB(A)

Issue – Cumulative Noise Assessment

DECC have indicated that they do not believe that a cumulative noise assessment taking into account all noise sources for the operation phase of the project has been completed, as the noise assessment to date has been limited to impacts of the power station alone as the location of gas extraction wells is as yet undetermined.

DECC has recommend the following modified and additional commitments:

- *Noise impacts from all operational activities at the premises will not exceed an Laeq(15min) noise level of 35dBA measured at the nearest residence*

Metgasco Response

Metgasco accepts that

- *Noise impacts from all operational activities at the premises will not exceed an LAeq(15min) noise level of RBL +5dBA measured at the nearest residence*

Based on the assessed RBL this would require the LAeq(15min) noise not to exceed 35 dB(A) between 10pm and 7am.

2.3.3 Overflow from Evaporation Storage Dam

Issue

The DECC does not believe that the EA has confirmed that an overflow from the evaporation/storage pond to the receiving environment would be environmentally sustainable. As such, the DEC believes it is appropriate that the project meet a zero waste discharge goal and this be reflected in the Statement of Commitments. The DEC also believe it is appropriate that further ongoing monitoring of extracted water be explicitly and transparently committed to by the applicant.

The DECChave recommend the following additional commitments:

- *All water generated by the project including well water will be collected and directed to the evap/storage ponds.*
- *There will be zero discharge of waste water stored in the evap/storage ponds*
- *The quality of the waste water extracted from the wells will be monitored regularly to evaluate and optimise reuse opportunities.*

Metgasco Response

Metgasco is committed to achieving a design philosophy of zero water discharge for the CGP and RVPS while maintaining an open and cooperative approach to the investigation of commercial beneficial use of the produced water from CGP in line with the Director General's requirements. Refer to Section 6.4.1 of the EA

As demonstrated in Section 3.2.3 of the EA, the basis for the pond design was to ensure nett evaporation and zero discharge from the ponds taking into account the volume of water produced during CSM production and the prevailing rainfall patterns in the region.

The modelling for the pond design showed that the peak depth of water (438mm below the top of the pond wall) would occur during May if the area had received 75% of the peak rainfall for the year and experienced the worst rainfall for the month based on the last 20 years data. This is also based on estimated peak water production rate; however, after the first two years, the total depth in the pond in May each year will start to decline, as the total inflow of water from the operations decreases over time.

The pond depth has been designed such that for any given month, the highest recorded rainfall since 1858 (when figures were first recorded) can be accommodated without the pond overflowing.

These models are considered to provide a conservative estimate of the potential volumes of water that would enter the ponds through rainfall as they combine high overall rainfall with some of the highest rainfall events known.

To permit the beneficial reuse of the water in the event that such beneficial uses are identified and to be consistent with the additional commitments included above in Section 2.2.6 as a result of submissions by DPI, we propose the following additional commitments:

- *The quality of the water extracted from the wells will be monitored regularly to evaluate and optimise reuse opportunities.*
- *All water generated by the project, including well water, will be collected and directed to evaporation / storage ponds.*
- *Unless it can be shown to be beneficial to pastures/crops and will not leave any adverse soil residues; there will be zero discharge of water stored in the evaporation / storage ponds*

2.3.4 Waste Management

DECC has recommend the following modified and additional commitments:

- *No solid or liquid waste will be disposed of on-site and all waste reuse, recycling and disposal will be managed by an external contractor in accordance with the document "waste classifications guidelines, DEC 2008".*
- *Used drill cuttings and other cutting fluid contaminated waste will be tested in accordance with the document "waste classifications guidelines, DEC 2008" to determine environmentally appropriate reuse, recycling or disposal options (on and offsite) for these wastes.*

Metgasco Response

As outlined in Section 3.2.3 of the EA, dewatered drill cuttings may be disposed of on-site (refer also to Section 2.2.6 of this document). Metgasco will amend Table ES-3 and Section 8 Summary of Commitments to include the following commitment:

- *Used drill cuttings and other cutting fluid contaminated waste will be tested in accordance with the document "waste classifications guidelines, DEC 2008" to determine environmentally appropriate reuse, recycling or disposal options (on and offsite) for these wastes.*

2.3.5 Aboriginal Cultural Heritage

DECC has recommended five commitments be included in Metgasco's Statement of Commitments in regards to:

- Process to be followed in the event of the discovery of human remains;
- Process to be followed in the event of the discovery of Aboriginal cultural objects;
- Making all reasonable efforts to avoid impacts to Aboriginal Cultural Heritage Values;
- Continued consultation and involvement with Aboriginal representatives for the project in ongoing management of Cultural Heritage values;
- Development of an Aboriginal Cultural Education program for induction of personnel and contractors in collaboration with the Aboriginal community.

Metgasco Response

The recommended additional commitment has been accepted by Metgasco and the Statement of Commitment has been updated accordingly (refer to Section 3 of this document).

2.4 RICHMOND VALLEY COUNCIL

2.4.1 Noise Emissions

Issue – Background Noise Level

The Richmond Valley Council (**RVC**) has indicated that the background noise level of 30dB(A) used to assess the impact of the plant is unlikely to be representative of the actual night time background noise in that locality and that actual background levels should be used to consider the impact of the project.

Metgasco Response

The background noise level for the project was established in accordance with the NSW Industrial Noise Policy (**INP**) 2000.

As outlined in Section 6.5.3 and Appendix F of the EA, background noise measurements were carried out at residences surrounding the proposed RVPS during the 17th and 18th May 2006 and January 2007 (daytime and night time). In both instances, the results of the measurements showed that background noise levels in the area can drop below 30dB(A).

The NSW INP states that where the rating background level is found to be less than 30 dB(A), then it is to be set to 30 dB(A). Thus, 30dB(A) is appropriate as the existing background noise level for the RVPS and CGP.

Issue – Operational Noise

The RVC also expressed concern that the predicted noise level used to assess the impact from the plant may not be representative of actual noise level produced under load when operational. The RVC also stated that account must be made of plant operating simultaneously and being representative of real life operations.

Metgasco Response

As outlined in Section 6.5.2 and Appendix F of the EA, the noise assessment for the RVPS was based on the use of 10x3MW GE Jenbacher 620 Gensets. The assessment took into account the 4m containment bund in which the generators would be located.

Field measurements were carried out at a similar size power station using similar equipment and operating at Daandine in Queensland. Therefore the measurements reflect the sound power levels of the actual equipment that will be installed at the RVPS operating under load to ensure that the assessment would be representative of the final development.

Refer to the discussion and additional commitments proposed in Section 2.3.2 of this document.

2.4.2 Dwelling Entitlements

Issue – Impact on existing Dwelling Entitlements

RVC believes that consideration should be given to surrounding properties which have dwelling entitlements, but are currently vacant, when assessing the proposal. The RVC has indicated that owners of affected properties have expressed their concern to the Council regarding potential implications for any future applications that that they may submit, due to the proximity of the proposed power station and gas project.

Metgasco Response

The main issue with the ability to impact on the blocks surrounding the power station site is noise.

Metgasco made the following commitment in the EA:

- *Noise impacts from the operation of the RVPS and CGP pumps will be restricted to meet ≤35dB(A) at the nearest residence.*

The nearest residence is approximately 1km north of the site on Lot 2 DP581855. The results of noise modelling completed for the project was provided in Section 6.5 and Appendix F of the EA and demonstrated that this noise limit could be achieved at the nearest residence, although some design modification were require to ensure that this limit was achieved under all weather conditions.

A summary of the blocks of land that do not have a current residence and which are either wholly or partially located in closer proximity than the current closest resident is provided in Table 5 and on Figure 1. The establishment of dwellings on these blocks may be adversely impacted by noise from the power station, depending on the location of the dwelling within the block.

Table 5 : Blocks Located Closer than Closest Residence

Lot/Plan	Description
	Majority of block potentially impacted
35DP755627	Block will be sub-divided to create the power station site. Remainder of the block to the east of the power station is currently cropped. Entire block may be impacted.
1DP524200	Block currently cropped. Entire block potentially impacted.
32DP755627	Majority of block currently cropped. Majority of block may be impacted.
36 DP755727	Block currently cropped. Northern half to third of the block may be impacted.
34DP755627	Block currently cropped. Majority of block may be impacted.
	Small Portion of Block potentially impacted
8DP732229	Block is wholly contained within Richmond Valley Council High Floodway Hazard category.
2DP524200	Block currently cropped. May only impact far western boundary of block.
62DP755611	May only impact small portion of the north western corner of the block.
1DP796991	May only impact small portion of the north western corner of the block.
38DP755627	Blocked currently cropped. North western corner of the block may be impacted

The decision on any application for dwellings on these and any other properties within the Council will rest with the Richmond Valley Council.

CLIENT: METGASCO

PROJECT: Richmond Valley Power Station

TITLE: Figure 1 Dwellings

DATE: 10/02/2010

DATA SOURCE:
DCDB copyright of State of NSW

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SCALE: 1:20,000 (A4) GDA94 Lat/Long

-400 0 400

Metres

LEGEND

- Proposed Power Station Site
- Petroleum Production Lease Boundary
- Dwellings
- Ponds
- Approx 1km Buffer Zone

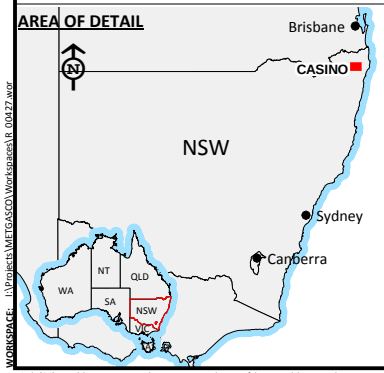
METGASCO

METGASCO

Level 9, 77 Pacific Highway,
North Sydney, NSW 2060

Telephone: (02) 9923 9100
Facsimile: (02) 9923 9199

AREA OF DETAIL



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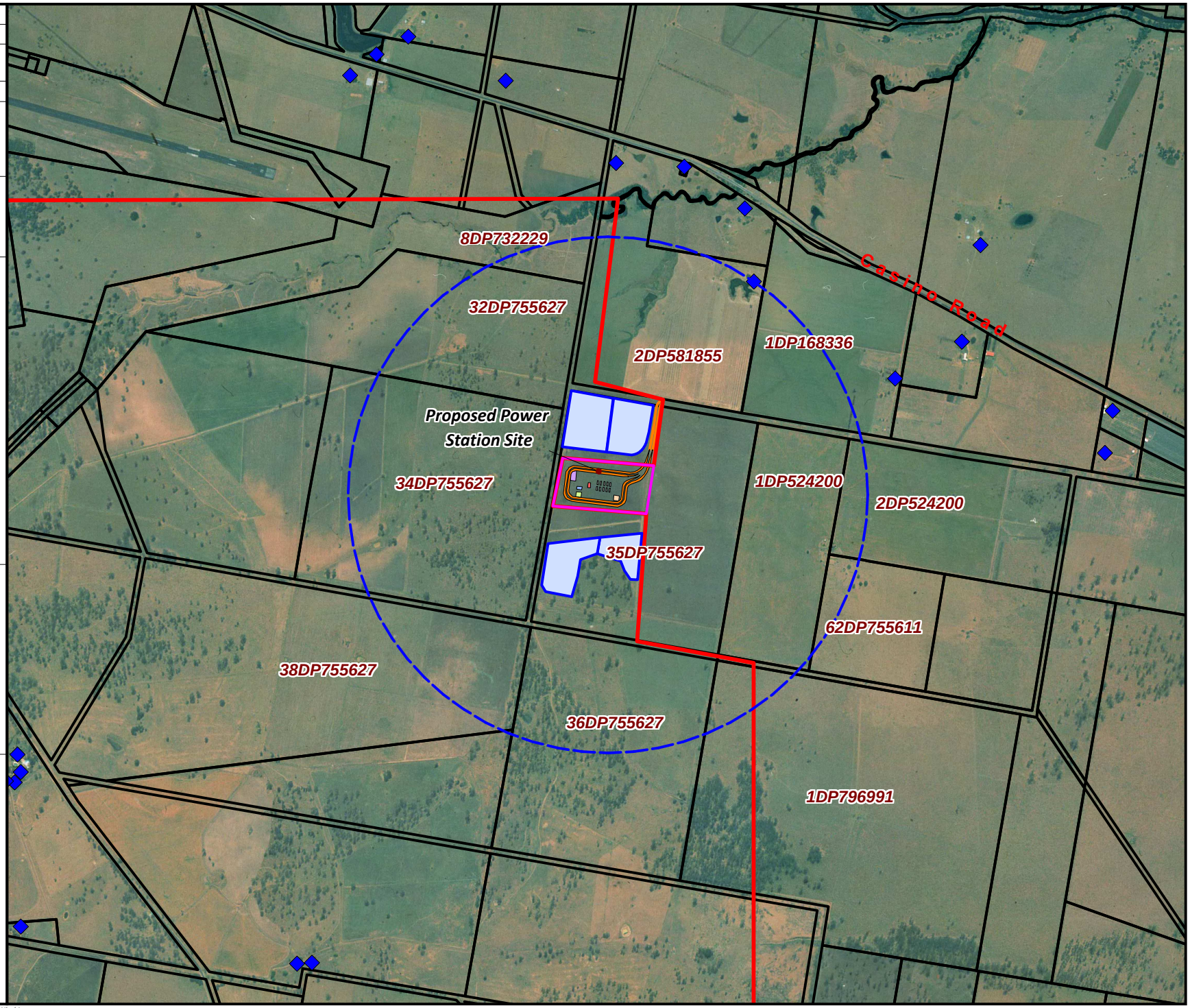

Issue – Additional Dwelling Entitlement

RVC has identified that an additional dwelling entitlement may be created by virtue of approval the proposed subdivision.

Metgasco Response

Department of Planning Northern Region has advised that the options for the proposed subdivision are:

- approval of the application under the SEPP (Rural Lands) - Clause 9 which will allow Proposed Lot 2 to be used for agricultural but will not enjoy a dwelling entitlement. Proposed Lot 1 will also not enjoy a dwelling entitlement.

or

- approval of the application under Richmond Rivers LEP - Clause 11 (include the SEPP 1 objection for proposed Lot 1) (as the existing application is for Proposed Lot 2) and under cl14 a dwelling may be erected in accordance with Cl 11 with council consent. However not only could Proposed Lot 1 allow a dwelling but proposed Lot 2 could also allow a dwelling.

As a dwelling entitlement is not required for either Lot 1 or 2, the application for subdivision of this block (5DP755627) (lodged with the RVC on 3 December 2009) proposes approval of the subdivision under SEPP (Rural Lands) - Clause 9.

2.4.3 Flooding

Issue – Extent of Flood Impact

RVC has requested additional details and clarification regarding the proposed impact on flood levels. The RVC notes that Section 6.4.2 of the EA states that the impact on the area around the proposed mound is 1-3 cm for Q100 and up to 15cm for Q500 and has requested information on how far this impact is.

Metgasco Response

As outlined in Section 8.1 of Appendix G of the EA, the floodplain modelling considered the Richmond River Floodplain, which extends from the Richmond River channel for approximately two kilometres to the north and six kilometres to the south.

The modeling undertaken for the EA is considered to be conservative as:

- It assumed that the bund around the power station would be equivalent to the height of a 1:500 year flood event, as per the design; and
- It assumed that the bund around the evaporation storage dams would be equivalent to the height of a 1: 500 year flood event. This has now been revised and the bund height around the dams will be to the height of a 1:50 year flood event.

Therefore, the actual increase in flood levels is expected to be less than predicted by the model. Even so, based on the conservative modelling, it was concluded in Appendix G of the EA (Hydrogeology Report) that:

Based on the results of hydraulic modelling, the proposed bund wall surrounding the power station is unlikely to have any significant impact on flood levels on the Richmond Valley Floodplain.

Issue – Impact on Flooding from Proposed Road

RVC requests details regarding the impact of flooding in the area due to the increased surface level of the proposed access road are provided.

Metgasco Response

The Hydrogeology assessment completed by Metgasco did not determine the impact of individual components of the project on the flood plain, but rather undertook a conservative assessment of the key elements of the project. As outlined above, the impact of the project on the floodplain, based on the conservative approach, was unlikely to have any significant impact on flood levels. Due to changes to the Project, the actual impact will be less than predicted by the model.

2.4.4 Access Road

Issue – Concurrence from RTA

RVC states that concurrence from the RTA will be required as the proposed access road will require an intersection with a classified road (Casino Coraki Road). The intersection will need to be designed and constructed in accordance with RTA standards and requirements.

Metgasco Response

Metgasco has made contact with the RTA and RVC. The Casino Coraki Road is a Classified Road under S.138 of the Roads Act and is controlled by the Richmond Valley Council. The RTA stated that they have no objection to the permanent access being created provided it is designed in accordance with AUSTROADS guidelines and consideration is given to sight distance and traffic generation potential. (refer to Attachment 1)

Issue – Access Road within Crown Reserve

RVC has noted that the proposed access road (for the RVPS) is within a Crown Road Reserve and that the proponents will need to discuss the access details with the Crown and not RVC as stated in Section 3.3.1 of the EA.

Metgasco Response

There are several options available to Metgasco for creation of access to the power station within a crown reserve. These include:

- application to close the crown reserve and creation of a private road;
- declaration of the road reserve as a public road with subsequent agreement with the Richmond Valley Council for maintenance of the road.

Metgasco understands that the RVC's preference is for Metgasco to apply for closure of the crown reserve and create the access road as a private road. Metgasco would then be responsible for maintenance of the access road and would permit access to the road by other users by agreement. This option is acceptable to Metgasco; but would be dependent on the agreement of the Crown. Metgasco would pursue the other options if a suitable agreement is not likely.

Issue – Ongoing Maintenance of Access Road

RVC has indicated they will not accept responsibility for the maintenance of the access road, but may consider responsibility if a full maintenance agreement for full ongoing maintenance costs is borne by the proponent.

Metgasco Response

This has been noted by Metgasco. The final outcome will be dependent on the circumstances under which access is created (refer to above).

2.4.5 Inspections, Plans and Approvals

The RVC notes:

- pre and post road/bride inspections on Councils affected road network will be required for heavy load routes;
- traffic control plans are required and shall be prepared by an RTA certified person;
- section 138 of the Roads Act approval for pipelines within/crossing a road reserve is required. The appropriate road authority may be Richmond Valley Council or the Crown.

Metgasco Response

These requirements are noted by Metgasco and will be included in the project schedule.

2.5 LANDHOLDERS

This section summarises the submissions made by landholders. For the purpose of this section, landholder details are not provided, but the individual landholders are identified by a reference code; Landholder 1, Landholder 2, Landholder 3, Landholder 4 & Landholder 5.

Table 6 : Landholders Responding to EA

Landholder	Land Parcels
Landholder 1	Located within PPL area, west of the power station site
Landholder 2	N/A
Landholder 3	Lot located east of power station site Lot intersected by boundary of PPL area Lot east of power station site
Landholder 4	N/A
Landholder 5	Lot is on northern side of power station site and is intersected by boundary of the PPL

As the key issues raised in the landholder submissions have a large common element, the submissions have been summarised by issue with a reference to the relevant Landholder code.

2.5.1 Noise & Air Emissions

Issue – Noise from Power Station

- Concern regarding the noise levels from the power station and the constant hum (Landholder 1& 5).
- Potential noise disturbance from RVPS in relation to proximity to dwellings either in existence or planned (Landholder 3).
- Will the power station be heard from South Casino and especially the CMCA (Landholder 4).

Metgasco Response

Metgasco made the following commitment in the EA:

- *Noise impacts from the operation of the RVPS and CGP pumps will be restricted to meet ≤35dB(A) at the nearest residence.*

The results of noise modelling completed for the project were provided in Section 6.5 of the EA and in Appendix F.

It was found that in the absence of light winds and temperature inversions the noise contour for 35dB(A) extended from 750m – 850m depending upon the direction from the noise source (refer Figure 6-6 of the EA). As the nearest residential place is approximately 1km from the proposed RVPS (on Lot 2 DP581855, north of the power station) the noise levels should therefore be within acceptable limits.

When a temperature inversion was taken into account the 35dB(A) contour extended from 900m-1000m (refer Figure 6-7 of the EA). Thus depending upon the orientation of the generator sets there may be a small potential for the noise limits to sometimes be reached at the nearest residents.

Additional noise modeling demonstrated that changes to the design could further reduce the noise emissions and Metgasco stated that these would be taken into consideration during the detailed design of the project to ensure that noise levels are within the stated limits.

Therefore, the power station is highly unlikely to cause disturbance to south Casino or the Casino Campervan and Motorhome Club of Australia (CMCA). In addition, the power station will be designed to ensure that noise emissions are acceptable at existing residential premises. Any proposed residences closer than the closest existing residence (approx 1 km from the power station site) would need to consider the noise from the power station.

Issue – Amenity of the Area

- Project considered undesirable due to noise, dust, mud, odour, and vehicle movements (Landholder 2).
- Concern regarding adverse impacts to landholders from previous exploration activities (mud, lighting issues, noise) (Landholder 2).

Metgasco Response

Metgasco is committed to implementing the project in such a manner that minimises adverse impacts on residences and the amenity of the surrounding area. This is demonstrated through the various commitments that Metgasco has made in regards to air, noise & light emissions and traffic movements (refer to Section 3 of the EA and this document). Metgasco provides landholders with prior notice of any activities and contact details of relevant Metgasco personnel should any issue arise. Metgasco has developed their program to work closely with landholders and resolve any issues promptly.

2.5.2 Crop Spraying

- Will the power station disrupt the current practice of using a plane or helicopter to spray chemicals or fertilize land surrounding the power station (Landholder 1 & 5)?

Metgasco Response

Metgasco completed an Aviation Assessment for the RVPS and the results were presented in Section 7.8 and Appendix B of the Environmental Assessment.

The Civil Aviation Authority (CASA) requires that the proponent of a facility with an exhaust plume that has an average vertical velocity exceeding the limiting value (i.e. 4.3 m/s at the obstacle limitation surface (OLS) or at 110m above ground level anywhere else) to assess the potential hazard posed by the plume to aircraft operations.

The assessment determined:

- the power station is to be situated 1.5km from the Casino Airport and is outside of the OLS as defined in the Casino Local Environment Plan 1992;
- the vertical velocity of the plume is unlikely to exceed 4.3 m/s at a height of 21m; and
- the vertical velocity of the plume is likely to be below 4.3 m/s under all meteorological conditions at a distance of up to 6m away from the stacks.

Metgasco does not believe that the power station will limit the ability of landholders to undertake aerial crop spraying. However, upon notification of proposed crop spraying from a neighbouring property, Metgasco will provide the above information to ensure that the pilot is aware of the power station, the likely size of the plume and enable this information to be considered in planning the flight. Metgasco will also provide the above information to the Casino Airport.

2.5.3 Evaporation / Storage Ponds

Issue

- It is understood that the ponds will have a flood levy to withstand a 1 in 25 year flood. There is concern that this is not sufficient given the heavy rainfall and flooding known to occur at Casino (Landholder 4).
- Concern regarding the contamination of surrounding areas from the ponds (Landholder 2, 3 & 4)
  - where would an overflow of the ponds go (Landholder 3)
  - what measures will be implemented to prevent the overflow of toxic water from the ponds (Landholder 4).
  - how will the ponds be sealed to prevent any leakage into sub terrain ground water systems (Landholder 4).
- Concern that the ponds will be toxic to wildlife (Landholder 2 & 4).
- An exact breakdown of the water quality from the wells comparing it to Australian Water quality guidelines should be provided and constant updates provided to landholders who could possibly have bi-product water used on their land (Landholder 4).
- Concern regarding the disposal of excess contaminated water at RVC approved sites and the qualifications and resources of the Council to assess the water and choose an appropriate location. (Landholder 4)

Metgasco Response

The issues of appropriate pond sizing for possible rainfall events, potential overflow of the ponds and alternative disposal of water are addressed in Section 2.3.3 of this document. In that section it is proposed to include an additional commitment in relation to regular monitoring of the quality of the water. While the produced water does contain salts and may not be immediately suitable for beneficial use without some upgrading none of the analyses carried out to date indicate that it is toxic.

2.5.4 Drainage / Flooding

Issue

- Concern regarding the ponds and other infrastructure interfering with overland flow and causing inundation of crop areas (Landholder 1).
- A flood plain is an inappropriate location for the project (Landholder 2).
- Concern that the construction of the bund around the power station and ponds will have an adverse impact on surrounding landholders and infrastructure during floods. One particular concern is that the ponds will block an existing drainage line, and cause water to back up onto crops adjacent the ponds (Landholder 1, 2 & 5)
- Concern that development would create increased run-off which would create an additional load on existing drainage and potentially adversely impact on farming activities (Landholder 3).
- Concern that the access road has the potential to interfere with the natural drainage in the area (Landholder 5)

Metgasco Response

As outlined in Section 2.2 of the EA, the site of the power station was selected on the basis of a review of a number of potential sites. Flooding studies completed as part of the EA have demonstrated that the proposed power station bund will not have a significant impact on flooding levels in the surrounding area (refer also to Section 2.2.2 of this document).

Metgasco is committed to ensuring that the proposal does not adversely impact on the surrounding agricultural activities of its neighbours. To this end, the project will be designed to maintain the current overland flow patterns as far as possible and include additional drainage where this is not possible. This is to ensure that there will be no backing up or additional inundation of land due to project infrastructure.

2.5.5 Gas Release

Issue

- Concern that the project may cause changes to the underground pressures and fractures and result in a serious escape of methane gas into the township (Landholder 4).

Metgasco Response

Prior to production of any gas, the gas is maintained in place by the natural hydrostatic pressure of water. To release the gas it is necessary to pump the water or to otherwise create a low pressure zone to allow the gas to be released. This process only occurs where the well intersects with the gas bearing seam. As the well continues to produce gas and water this low pressure zone expands; however the lowest pressure zone remains close to the well and production naturally flows to the low pressure area. In locations remote from this point the natural hydrostatic pressure is unchanged and the gas remains trapped.

2.5.6 Existing Water Wells

Issue

- Can Metgasco be certain that extraction of water during production will not lower water levels used for livestock in the Richmond Valley area (Landholder 4).
- Will the drilling interfere with the supply of water from existing wells and is there any risk of contamination of these bores (Landholder 5).

Metgasco Response

Section 6.3 of the EA identified potential aquifers in the area, with 98% of existing bores sourcing water from the Quaternary Alluvium or Grafton Formation:

- Quaternary Alluvium (approximately 0 – 20 m);
- Grafton Formation sandstones (approximately 20 – 100 m);
- Kangaroo Creek Sandstone (approximately 100 – 450 m); and,
- Walloon Coal Measures (approximately 450-680 m).

Section 6.3.1 of the EA presented results of hydrogeological modeling concluded that:

- the drawdown of water within the Walloon Coal measures would be between 1 – 1.5m;
- it is unlikely that the shallower aquifers will experience similar levels of drawdown as the Walloon Coal measures, as there is sufficient hydrogeological differences between the formation where the produced water will be extracted from and the formations where existing stock bores draw their water from; and
- these findings were consistent with previous experience in other areas, particularly the Surat Basin, where dewatering of deep coal seams has negligible impact on shallow alluvial environments (Parsons Brinckerhoff, 2004).

The potential for any cross contamination of water between the aquifers will be minimised though the design of the well:

- all wells will be cased-off and cemented for their entire length in accordance with the requirements of the Department of Primary Industries.
- this will include the use of a pressure-rated steel casing.
- the casing will isolate the shallow aquifers from the geological section where the gas and water will be extracted.
- decommissioned and abandoned wells will be filled with cement to further prevent the risk of cross contamination once the wells are no longer required.

2.5.7 Leaching of Organic Chemicals

Issue

- How does Metgasco propose to contain the leaching out of organic coal chemicals during gas production (Landholder 4).

Metgasco Response

Metgasco is not aware of any process utilised on the Casino Gas Project that will result in the release of organic coal chemicals during gas production. As stated in the EA, Coal Seam Gas (CSG) is adsorbed, under pressure, on the surface of the coal in the seam and this gas is released (produced from the well) by lowering of the hydrostatic pressure in the well(s). There are no chemical reactions involved in the process.

This is quite different from underground coal gasification projects, which are not being undertaken by Metgasco and is the process of gasifying coal in-situ. That process does result in chemical reactions within the coal seam and produces a high quality synthetic gas (syngas), containing carbon monoxide, hydrogen and methane. The RVPS and CGP DOES NOT involve this or any similar process.

2.5.8 Property Development

Issue – Objection to Well Sites

- Objection to any wells on Lot Bor use of property for access (Landholder 3).
- Objection to any well locations close to proposed dwelling, sheds and grain storage on Lot A(Landholder 3).

Metgasco Response

As per Section 3.2.1 of the EA, selection of well sites has been primarily based on the geological analysis completed as part of the exploration works. Other factors that have also been considered in locating the well sites include:

- landform and topography – a relatively firm and level pad is required;
- environmental and heritage constraints – avoiding environmentally and culturally sensitive areas and utilising previously disturbed areas minimises potential environmental impacts;
- landholder disturbance – the location of houses and existing land use are considered to minimise impacts to landholders and ongoing land use; and
- existing site access – locating sites close to existing tracks, fence lines etc minimises impacts associated with access and disturbance to primary production.

In accordance with the POA, Metgasco is required to have access agreements with each relevant landholder which will detail proposed well locations, works required on each property, restoration plans and compensation arrangements.

Access to the well sites from the two existing public roads, namely Ellangowan Road and Casino - Coraki Rd. will be via existing internal property tracks, or on new tracks to be developed in accordance with individual landowner agreements. The actual access routes will not be determined until the final well sites have been chosen.

Nominally two well sites have been proposed along the western boundary of Lot B, which is close to the eastern boundary of the proposed PPL. Depending on negotiations with the individual landholders and the final requirements for well sites, these well sites could be located in either of Lot B or the adjacent Lot. The preferred route for access to these well sites has not been determined but will be agreed in consultation with the landholder/s. Lot A is located outside of the proposed PPL boundary and therefore will not have any infrastructure associated with the CGP on the lot.

Issue – Future Development

- A landholder has identified that their property may be able to be subdivided into five 40 hectare blocks in the future and may be required for future housing blocks. They are concerned that the presence of the power station may adversely impact on the ability to do this and are concerned about any buffer distance that may be required between the power station and any future house (Landholder 1 & 3)).
- Concern that the power station will impact on the ability of landholders to build on or sell blocks close to the power station and the blocks will be devalued (Landholder 1 & 3).

Metgasco Response

Of the following lots, only a portion of Lot B lies within the proposed PPL boundaries:

- Lot A
- Lot F
- Lots B to D
- Lot E

Lot B will therefore be the only Lot that may be affected by infrastructure associated with the CGP.

Lot A is indicated as the only Lot on which the Richmond Valley Council would approve the construction of a dwelling. Based on the noise contours (refer Fig 6-6 of the EA) the SPL for the whole of Lot A would be 25dB(A) or less where there was no temperature inversion. When an allowance is included for a temperature inversion is included the extreme north western corner of Lot A falls within the 35dB(A) contour and would therefore still meet the noise criteria for the project.

Refer to Section 2.5.1 of this document for additional information regarding noise impacts on surrounding properties.

Refer to Section 2.4.2 of this document for additional information regarding impacts to existing dwelling entitlements.

2.5.9 Access Road

Issue

- Concern regarding an increase in traffic going to and from the plant along a dirt road creating dust and degradation of the road. Any increased use of the road would require significant upgrading (Landholder 3 & 5)

Metgasco Response

Access to the Richmond Valley Power Station site will be via a new road constructed along the existing Crown Reserve, as discussed in Section 7.4.1 of the EA.

This Crown Road Reserve is currently used by several landholders as access to agriculture blocks and the existing track is poor quality and not maintained by the Richmond Valley Council. Metgasco has made the following commitment in relation to this access road:

- *The RVPS access road will be constructed to RVC specifications to a standard suitable to accept the required construction transport.*

Metgasco also acknowledges the concerns in regards to dust generation from access tracks and is committed to ensuring that this does not adversely impact on landholders or residents.

A number of new access tracks will be required for access to the proposed well sites for the Casino Gas Project, as described in Section 3.2.1 of the EA. Metgasco has made the following commitments:

- *New access tracks will be lightly formed and gravelled to a standard sufficient to the field activities (typically 4m wide x 150mm thick).*
- *The location of access tracks and upgrading of existing tracks will be completed in consultation with the relevant land holders, with a view to minimising impacts on agricultural land and potentially providing beneficial use for the landowner for additional access on the property.*

3 REVISED STATEMENT OF COMMITTMENTS

The EA which was released for public comment in August 2008 contained a summary of commitments which Metgasco had proposed to manage the Project.

This draft Statement of commitments has now been revised following consideration of the submissions on the EA by stakeholders. The revised Statement of Commitments is provided in Table 7 Revisions and additions to the Commitments have been highlighted with **BOLD** text.

Table 7 : Revised Statement of Commitments

Subject	Commitment/Safeguard	Primary Section Reference in EA
Air	No venting or flaring of gas will occur under normal operational conditions, however flaring may occur in emergency or plant upset situations.	6.3.1
	The proposal will be designed and operated to ensure that the ground level concentration of NOx does not exceed 246 µg/m^3 over 1 hour in any off-site location	6.3.3
	The proposal will be designed and operated to ensure that a NOx stack emission limit of 450mg/m^3 is met.	6.3.3
	Activities will be undertaken in a manner that minimises the generation or emission of dust. Measures proposed to minimise dust will be documented within the relevant construction and operational EMP's and include: • The use of dust suppression management measures (e.g. water trucks) during construction; and • Establishment of vegetative cover on all exposed ground areas (e.g. over gas and water gathering pipelines; banks of evaporation/storage ponds and banks of RVPS bund)	6.3.2
Water	The Proponent will continue to monitor water levels and quality in underground aquifers of the Quaternary Alluvium and Grafton Formation to ensure there are no adverse impacts on beneficial groundwater usage in the area. The volume of water entering the evaporation/storage ponds will be monitored on a regular basis to evaluate the actual quantity of water produced. This monitoring will be used to evaluate the rate at which the pond cells need to be brought on line to ensure sufficient pond capacity is available at all times	6.4.1
	The quality of the water extracted from the wells will be monitored regularly to evaluate and optimise reuse opportunities. **All water generated by the project including well water will be collected and directed to evaporation / storage ponds.** **Unless it can be shown to be beneficial to pastures/crops and will not leave any adverse soil residues; there will be zero discharge of water stored in the evaporation / storage ponds**	3.2.3

Subject	Commitment/Safeguard	Primary Section Reference in EA
Noise and Vibration	Transport movements will, as far as practicable, be restricted to normal daytime working hours. Earth works will as far as practicable be limited to normal working hours during the daytime. Sound power level readings will be carried out for the drill rig once drilling operations commence. ~~Noise impacts from the operation of the RVPS and CGP pumps will be restricted to meet ≤35dB(A) at the nearest residence.~~ **Noise impacts from the construction and operation of the RVPS and CGP Project will comply with the noise limits outlined in Table 4 of this Submission Report.** **Noise impacts from all operational activities at the premises will not exceed an LAeq(15min) noise level of RBL +5dBA measured at the nearest residence between 10pm and 7am.** Construction activities will be scheduled, as far as possible, to minimise noise impacts.	6.5.2
	Appropriate buffer distances will be established around noise sensitive receptors (based on the results of noise modeling) and these areas will be clearly marked on all Project planning maps.	Environmental Risk Asst
Ecology	Control measures as defined in Section 6.4.4 to prevent impacts to fauna and ecologically sensitive areas will be defined within the Project EMP's and will be communicated to all personnel through the workforce induction program. Measures will include: • Clear definition within the Project GIS and on Project plans of areas of high ecological sensitivity and areas that are to be avoided when siting infrastructure, • Control measures that must be implemented when placing infrastructure within areas identified as having ecological sensitivity. • Offset planting measures, rehabilitation and restoration measures.	6.6.4
Hazard and Risk	The gas gathering system will be designed, constructed and operated in accordance with *AS 3723-1989 Installation and Maintenance of Plastic Pipe Systems for Gas*.	3.2.3
	The Project will incorporate technical controls for the gas wellhead assemblies which comply with section 2.3 of the *Locational Guidelines 'Development in the vicinity of Operating Coal Seam Methane Wells'* produced by the Department of Infrastructure, Planning and Natural Resources (May 2004)	6.7.1
	The safety assessment process will continue throughout the subsequent stages of design, construction and commissioning of the facility in accordance with the guidelines in Department of Planning's (DoP) Advisory Paper No 3. A hazard and operability study, fire safety study, emergency plan and updated (final) hazard analysis will be undertaken during the detailed engineering stage of the Project. A comprehensive construction safety management system, incorporating independent hazard auditing at regular intervals during plant operation, will be developed and implemented.	6.7.2
Land Resources and Land Use	All drilling and testing activities will be contained within a stock fenced area. Appropriate signage relating to restricted entry, fire hazards and protective clothing will be prominently displayed to warn landowners and the public of the dangers and required controls.	3.2.2

Subject	Commitment/Safeguard	Primary Section Reference in EA
	The restoration of well sites and associated infrastructure will be undertaken in stages with partial restoration being carried out following the completion of drilling and complete restoration once the well ceases operation. Partial restoration following completion of drilling of the wells will involve: • Dewatering, drying and backfilling of drill pits (where used); • Removal of surplus hardstand gravel material; • Partial ripping and respreading of topsoil on excess cleared areas to promote revegetation and stabilisation of the edges; • Ripping excess roads and tracks used during drilling unless otherwise requested by the landholder; • Removal of excess material off-site; • Respreading of stockpiled topsoil; and • Reseeding and fertiliser as required and in accordance with landowner requirements.	3.2.3
	Final restoration will be completed once each well ceases operations and will involve: • Plugging and abandoning the well in accordance with DPI requirements (removal of all petroleum plant and equipment from the surface, plugging of well hole by filling with cement slurry and capping 1 metre below the surface) • Filling and restoration of any excavations or pits to enable pre-development land use to recommence. • Additional measures as agreed with the landholder (e.g. removal of hardstand areas and access tracks, ripping to relieve compaction, recontouring and revegetation/reseeding).	3.2.5
	The Proponent will reach agreement with each relevant landholder with respect to the well locations, works required on each property, restoration plans and compensation arrangements. The agreements will be formalised through a Landholder Agreement which meets the requirements of the *Petroleum (Onshore) Act 1991*, and which meets the practical needs of both the Proponent and landowners.	6.9.2
Aboriginal and Cultural Heritage	The Proponent intends to continue to implement its current arrangements with the CBALC, which includes the completion of heritage surveys prior to ground disturbing activities. The Proponent will formalise its current arrangements with the CBALC through the development and implementation of a Cultural Heritage Protocol in consultation with CBALC. **If human remains are located during the project, all works will halt in the immediate area to prevent any further impacts to the find or finds. The local police, the Aboriginal community and DECC will be notified. If the remains are found to be of Aboriginal origin and the police consider the site not an investigation site for criminal activities, DECC will be contacted and notified of the situation and works are not to resume in the designated area until approval in writing is provided by DECC. In the event that a criminal investigation ensues, works will not resume in the designated area until approval in writing is obtained from the Police and DECC.** **If Aboriginal cultural objects are uncovered due to the development activities, all works will halt in the immediate area to prevent any further impacts to the find or finds. A suitably**	7.0

Subject	Commitment/Safeguard	Primary Section Reference in EA
	qualified archaeologist and Aboriginal community representatives will be contacted to determine the significance of the find(s). The site will be registered in the AHIIMS (managed by DECC) and the management of outcome for the site included in the information provided to the AHIMS. The Aboriginal community representatives will be consulted in developing and implementing management strategies for all sites, with all information required for informed consent being given to the representatives for this purpose. **All reasonable efforts will be made to avoid impacts to Aboriginal Cultural Heritage values at all stages of the development works. If impacts are unavoidable, mitigation measures will be negotiated with the Aboriginal community and DECC.** **The applicant will continue to consult with and involve Aboriginal representatives for the project, in the ongoing management of the Aboriginal Cultural Heritage values.** **An Aboriginal Cultural Education program will be developed for the induction of personnel and contractors involved in the construction activities on site. The program will be developed in collaboration with the Aboriginal community.**	
Soil and Erosion	Control measures as defined in Section 7.2.3 to prevent soil erosion, capture and control sediment load and enhance final restoration will be defined within the Project EMP's and will be communicated to all personnel through the workforce induction program.	3.2.2, 3.2.3 & 7.2.3
Coal Seam Fracturing	If fracing was to be required, the Proponent would employ a specialist drilling/fracing company and would present the proposed fracing program to DPI prior to commencement of any such activity.	7.3
Access, Traffic and Transport	New access tracks will be lightly formed and gravelled to a standard sufficient to the field activities (typically 4m wide x 150mm thick). The location of access tracks and upgrading of existing tracks will be completed in consultation with the relevant land holders, with a view to minimising impacts on agricultural land and potentially providing beneficial use for the landowner for additional access on the property.	3.2.1
	All transport movements on existing roads will be carried out with due consideration for the safety of the general public.	7.4.1
	The Proponent will work with the RVC road engineers to implement an appropriate intersection at the Casino-Coraki Road entry to the RVPS plant. The RVPS access road will be constructed to RVC specifications to a standard suitable to accept the required construction transport. Metgasco will also work with the RVC road engineers to implement the appropriate measures for the management of the exit and entry of all Project vehicles during both construction and operation. This will include appropriate signage (e.g. trucks turning, reduce speed) as required for the safe management of the intersection.	7.4.1
	The EPC Contractor will be required to develop and implement a Transport and Traffic Management Plan (TTMP) for the construction phase of the Project. It is envisaged that the TTMP will include, but not be limited to: • Permitting requirements for heavy and oversized loads; • Pre-construction survey of roads; • Scheduling of construction deliveries to minimise potential impacts to existing road users; • Definition of transport routes; • Site layout and allocation of areas for unloading, manoeuvring and	7.4.1

Subject	Commitment/Safeguard	Primary Section Reference in EA
	parking; • On and off-site signage; • Speed limits and road haulage limits where applicable; and • Any additional conditions imposed as a condition of the approval.	
Waste Management	No solid wastes will be disposed of on-site and all waste reuse, recycling and / or disposal will be managed by an external contractor.	3.2, 3.3 & 7.5
	During construction, temporary portable toilet facilities will be installed on-site, and shall be emptied at appropriate frequencies by licensed contractors. There will not be any on-site treatment and disposal of sewage during construction.	3.2, 3.3 & 7.5
	It is anticipated that self contained drill rigs will be used and that mud pits will not be required. However this is dependent upon the type and availability of the drill rigs. Where mud pits are required excess water from mud pits will only be disposed of by irrigation to pasture where: • Potassium chloride (KCl) concentration in the mud sump is less than 25,000 ppm; and • Other TDS including sodium chloride (NaCl) is less than 5000 ppm; • **It can be shown to be beneficial to pastures/crops and will not leave any adverse soil residues;** and • The landholder agrees. In other cases, the drilling fluid will be removed to a Richmond Valley Council approved disposal site Only firm drill cuttings, with near neutral pH, and hardened cement slurry residue will remain in the drill pits, if used. Any drill pits will be backfilled and remaining cuttings covered with at least one metre of soil. Back filled pits will be compacted and left mounded to provide for future subsidence. A layer of topsoil will be spread across areas disturbed by pit excavation. **Used drill cuttings and other cutting fluid contaminated waste will be tested in accordance with the document "waste classifications guidelines, DEC 2008" to determine environmentally appropriate reuse, recycling or disposal options (on and offsite) for these wastes.**	3.2.2
	Design of the sewerage system has not been undertaken at this early stage of the RVPS Project however it is envisaged that sewage will be handled through a package treatment plant on-site with nil off-site discharge. If the soil within the bund area is not appropriate for the effluent disposal from this unit then appropriate soils will be imported to the site.	3.3.3
	Waste management plans/measures will be included in the EMPs and will clearly identify waste streams, storage and final disposal points. Attempts will be made to recycle materials where services are available.	7.5
Stormwater Management	During drilling activities stormwater flow from undisturbed areas will be directed around the drill pad	7.6.1
	Culverts will be installed on access tracks, where necessary, to ensure drainage patterns are maintained.	Environmental Risk Asst
	During construction stormwater flow from undisturbed areas on the RVPS site will be directed around the construction area. Measures will be put in place to ensure that stormwater is not	7.6.2

Subject	Commitment/Safeguard	Primary Section Reference in EA
	concentrated and is directed to stable areas.	
	The stormwater system for the power generation facility will be designed to ensure that clean stormwater is kept separate from potentially contaminated stormwater runoff. Overland flow from adjacent areas will be diverted around the site by the installation of the containment bund and clean stormwater on the site will be captured and directed to areas that will allow any sediment to settle out. Areas capable of being contaminated such as around the engines, transformer, oil and chemical storage area will be bunded and the drains will be directed to an oily water separator. Where appropriate the bunds will be covered to minimise rain and ground water ingress.	7.6.2
Amenity	Use of directional lighting and locating lights to minimise disturbance.	Environmental Risk Asst
	Whilst gas will be flared in an emergency or upset condition this will be an uncommon event and the flare should not impact the amenity of the area.	7.7.1
	Provide screening plantings of Red River Gums to the north and east of the plant facilities to minimise visual impact.	7.7.2
	Use of low reflective materials for external parts of buildings and structures. Use of colours for buildings that enable the facility to blend in with the surroundings.	7.7.2
Environmental Management	Environmental management will be implemented through the use of EMPs. EMPs will be dynamic documents and will be regularly updated in consultation with the relevant Authorities, to incorporate changes in environmental management procedures in the light of new technologies, legislation and environmental policies of the Proponent.	1.5
Legislation and Permits	All applicable legislation will be followed and all applicable licences and permits will be obtained before the Project commences.	4.0

Attachment 1
Letter from RTA

File No. 389.5351 08/1967
Your Reference: S06/00305; 06_217
Tara McAuley

RTA

COASTAL ASSESSMENTS
RECEIVED
06 NOV 2008
NSW Department
of Planning

RCVD 6/11/08
NOTCA
→ MID

Director, Coastal Assessments
Department of Planning
GPO Box 39
SYDNEY NSW 2001

Richmond Valley Power Station and Casino Gas Project, Summerland Way (MR83), Casino

Dear Madam/Sir

Reference is made to your letter dated 29 September 2008 concerning the Environmental Assessment for the above proposal.

It should be noted that Casino Coraki Road a Regional Road is under the care and control of Richmond Valley Council. Council sets standards and determine priorities.

The RTA has no objections to a permanent access being constructed onto this road provided any access is designed in accordance with AUSTROADS guidelines and consideration is given to sight distance and traffic generation potential.

For any further information please contact Traffic Engineering Officer Tara McAuley at the Grafton Regional Office on 02 6604 9322 or by email at land_use_northern@rta.nsw.gov.au.

Yours faithfully

- 4 NOV 2008

David Bell
Regional Manager, Northern Region

Roads and Traffic Authority ABN 64 480 155 255

31 Victoria Street, Grafton NSW 2460
PO Box 576 Grafton NSW 2460
www.rta.nsw.gov.au | 02 6640 1300

Attachment 2
Copy of Submissions

Note:

To protect the confidentiality of landholders who made submissions in relation to the project, copies of these submissions have been removed from this Attachment.