

Kemerton Lateral Gas Pipeline

**Dampier to Bunbury Natural Gas Pipeline (WA) Nominees Pty
Limited**

**Report and recommendations
of the Environmental Protection Authority**

**Environmental Protection Authority
Perth, Western Australia
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Environmental Impact Assessment Process Timelines

Date	Progress stages	Time (weeks)
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31/10/05	ARI Level of Assessment set and EPA report to the Minister for the Environment; Science	8

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1. Introduction and background

This report provides the advice and recommendations of the Environmental Protection Authority (EPA) to the Minister for the Environment on the environmental factors relevant to the proposal by Dampier to Bunbury Natural Gas Pipeline (DBNGP) (WA) Nominees Pty Limited to construct and operate a 5 kilometre (km) pipeline connecting at Main Line Valve (MLV) 154/155, on the Dampier to Bunbury Natural Gas Pipeline to supply gas to the Kemerton Power Station.

Transfield Services Kemerton Pty Limited (as trustee for Transfield Services Kemerton Trust) was given environmental approval in 2004 to construct a 260 Mega Watt (MW) gas fired peak load power station, to supply power to the South West Interconnected System (SWIS). Presently, the Kemerton Power Station is under construction and is expected to be operational by the end of 2005. DBNGP (WA) Nominees Pty Limited proposes to construct and operate the 5km gas pipeline to supply gas to the Kemerton Power Station.

Based on the information provided in the referral document (Ecos 2005) the EPA considered that, while the proposal has the potential to affect the environment, it could be managed to meet the EPA's environmental objectives.

The proponent has submitted a referral document setting out the details of the proposal, potential environmental impacts and appropriate commitments to manage those impacts. The EPA considers that the proposal as described can be managed in an acceptable manner, subject to the EPA's recommended conditions being made legally binding.

The EPA has therefore determined under Section 40(1) of the Environmental Protection Act that the level of assessment for the proposal is Assessment on Referral Information, and this report provides the EPA advice and recommendations in accordance with Section 44(1).

2. The proposal

DBNGP (WA) Nominees Pty Limited, proposes to construct and operate a pipeline to supply gas to the Kemerton Power Station (located approximately 22km north east of Bunbury nearby the Kemerton Industrial Estate) and to construct a meter station at the power station site (Figure 1). The proposed pipeline would be 5km long and would connect to the DBNGP at MLV 154/155 and then run parallel to the existing DBNGP until it deviates west to supply the Kemerton Power Station (Figure 2). The proposed pipeline would be installed in the existing 16-metre (m) wide DBNGP easement, previously cleared in the 1980's.

The pipeline would consist of one 300 millimetre (mm) diameter pipe, designed in accordance with Australian Standard AS2885: Pipelines - Gas and Liquid Petroleum, and would be placed 900 mm below the ground surface. Standard pipeline construction practices will be adopted for the proposed Kemerton Lateral gas pipeline. Construction techniques would be in accordance with the Australian Pipeline Industry Association *Code of Environmental Practice*.

The main characteristics of the proposal are summarised in the table below.

Table 1: Summary of key proposal characteristics

Element	Description
Proponent	DBNGP (WA) Nominees Pty Ltd
Location	Nearby the Kemerton Industrial Estate, 22 kilometres North East of Bunbury.
Proposed Action	Construct a 300 millimetre diameter pipeline adjacent to the existing DBNGP corridor to provide gas to the Kemerton Power Station
Route Alignment	The route begins at Main Line Valve 154/155 and runs south within the existing DBNGP easement for approximately 5 kilometres. The route then deviates west for approximately 100 metres to the Kemerton Power Station site
Route Length	Approximately 5 kilometres
Proposed Tenure	The majority of the pipeline will be constructed wholly within the existing DBNGP easement. The exception is the final 100 metres west to the power station. This will be gazetted as separate easement under the <i>Petroleum Pipelines Act 1969</i> . The first 4 kilometres of the easement traverses freehold land owned by the Kemerton Silica Sands mine. The rest of the area is managed by the West Australian Land Authority
Area of temporary vegetation clearance	Approximately 8 hectares
Maximum length of trench to be left open during day time	800 metres
Maximum length of trench to be left open during night time	36 metres
Construction Duration	Approximately 5 weeks

The potential impacts of the proposal are discussed by the proponent in the referral document (Ecos 2005).

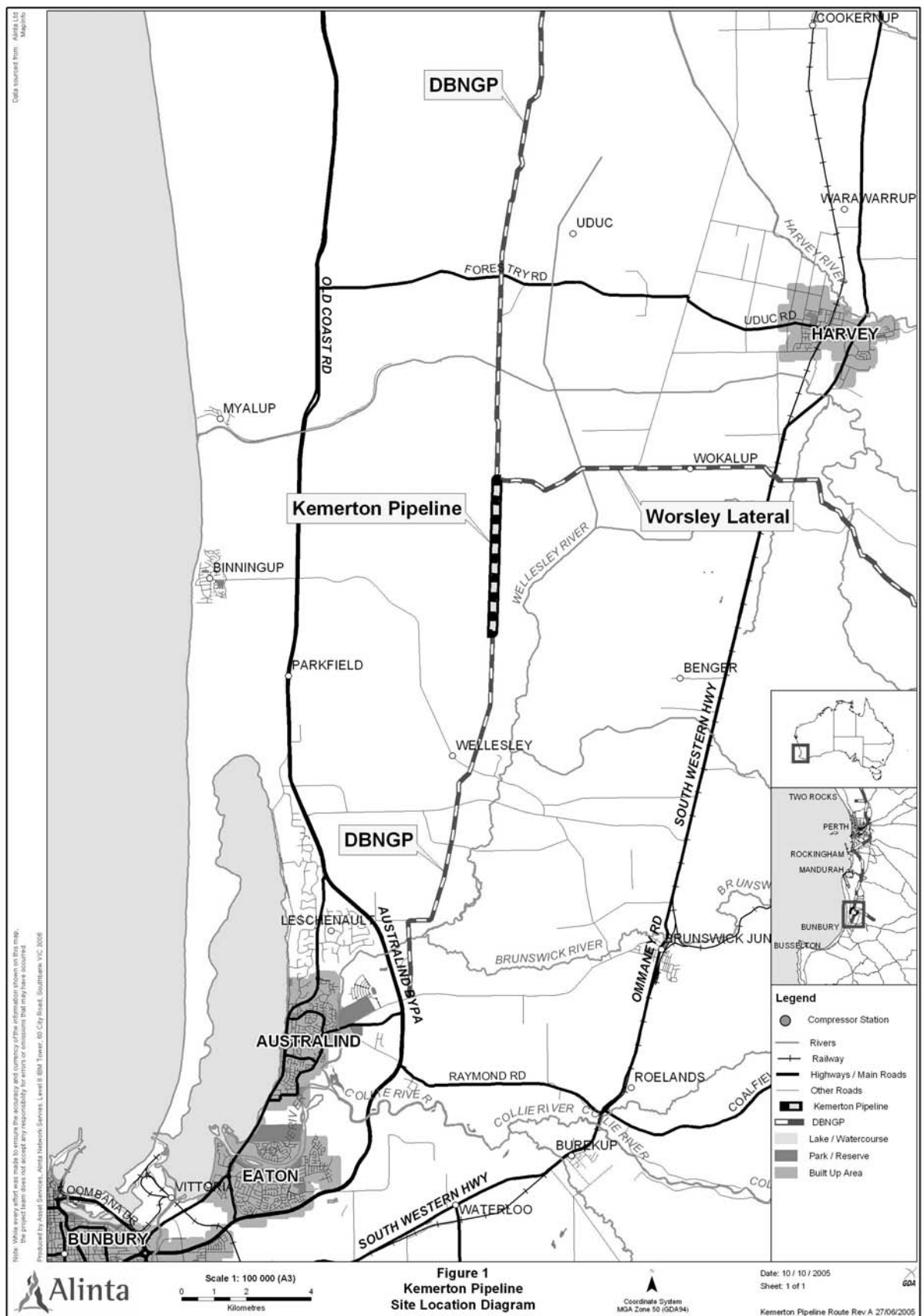


Figure 1: Kemerton Pipeline Site Location Diagram

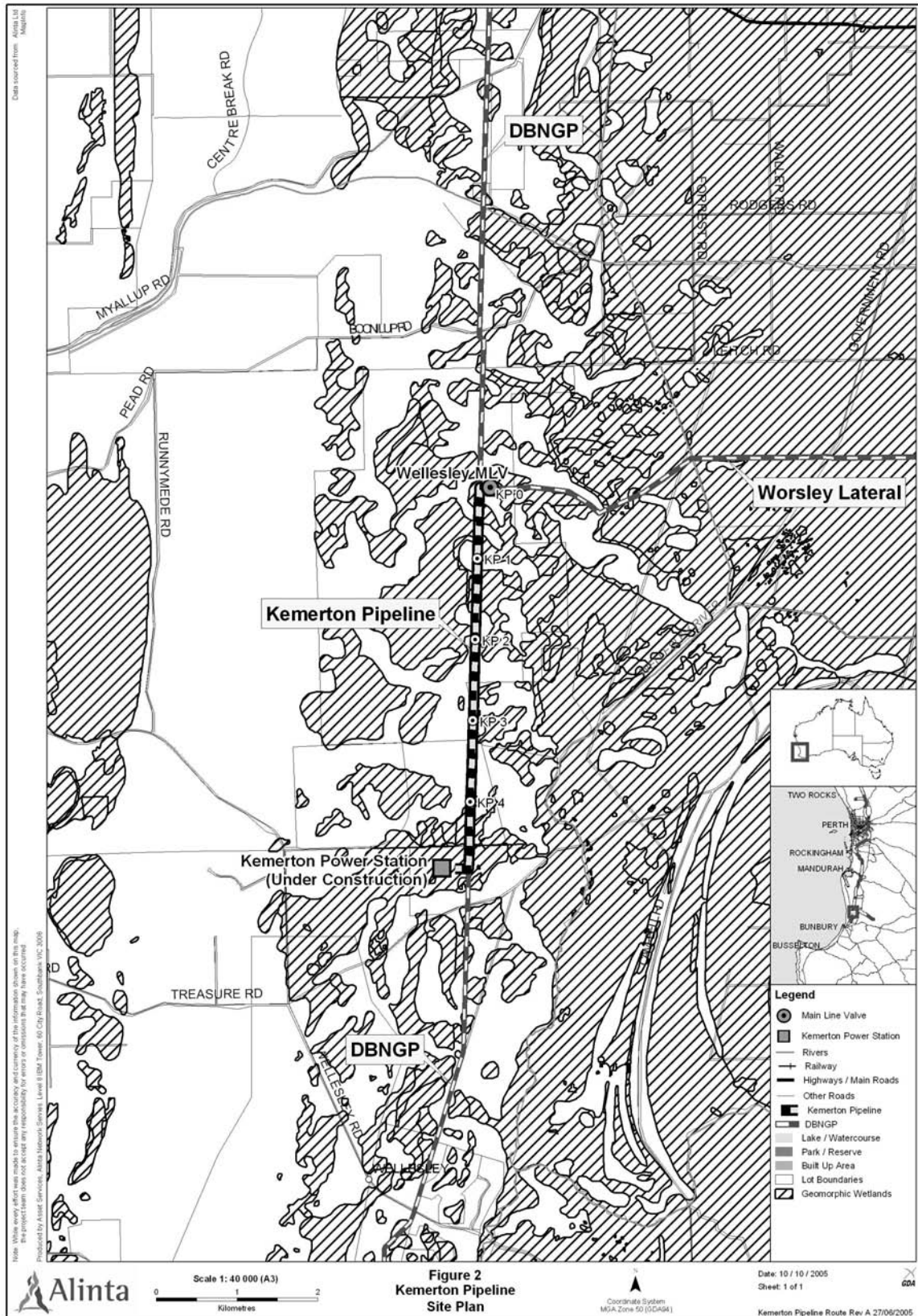


Figure 2: Kemerton Pipeline Site Plan

2.1 Alternative Routes Considered

The former Gas Pipeline Working Group requested advice from the EPA on the environmental constraints associated with expanding the existing DBNGP corridor between Kwinana and the Kemerton Industrial Estate. The EPA provided its advice in the Section 16(e) report *Dampier to Bunbury Natural Gas Pipeline Corridor Widening – Kwinana to Bunbury Project* (EPA 2004a). The EPA's report highlighted areas where further work would be required by proponents prior to assessment of individual gas pipeline proposals within the existing or proposed expanded corridor, under Section 38 of the *Environmental Protection Act, 1986*. Kemerton was identified in the report (EPA 2004a) as being an environmentally sensitive area. As such, any future pipeline proposals through this area would need to explore alternative routes to minimise environmental impacts to this area.

DBNGP (WA) Nominees Pty Ltd has considered the EPA's advice, but believe their options are constrained since no provisions have been made to acquire land and provide an alternative easement for new gas pipeline proponents. As a result, there is no current easement deviation to the east or west of the existing DBNGP easement. The proponent considered the following options in an effort to explore alternative pipeline routes:

1. Hot tap onto the existing DBNGP (anywhere south of MLV 154/155):

This option was the first considered as it is the simplest and most economic, however the volume of gas needed by the Kemerton Power Station is about eight times higher than the existing gas flow to Bunbury. Hence the existing pipeline, which is 200mm in diameter does not have the capacity to supply the Kemerton Power Station.

2. Offtake at MLV 154/155:

The pipeline would be constructed within the existing DBNGP easement. This route alignment is the most direct and requires the least clearing. The easement was cleared approximately 20 years ago and has regrown since that time. The proponent noted that in selecting this route alignment, similar infrastructure assets would be kept together in a controlled corridor, leading to increased public safety and minimal environmental disturbance.

3. West of the existing DBNGP corridor:

This area is of high conservation significance and is undisturbed bushland. Since a direct path is not possible due to other infrastructure crossings and the proposed mining area of Kemerton Silica Sands, a route through this area would result in significant disturbance to the land, and as such was discounted.

4. East of the DBNGP corridor:

This area contains the habitat for the Priority 3 Black-striped Minnow (*Galaxiella nigrostriata*) and an area of Muchea Limestone soils (Threatened Ecological Community) under the (*Environmental Protection and Biodiversity Conservation*

Act 1999). These areas were identified to be of significant importance that should not be disturbed.

5. The existing Western Power high voltage power easement:

The proponent believes that from an engineering perspective, pipeline installation into this area was not possible since high voltage power line faults may lead to accelerated corrosion of the pipeline or other faults, and that potential safety and environmental impacts associated with a possible failure of the pipeline eliminated this option.

6. The road servicing Kemerton Silica Sands mine:

The road is private, and services the Kemerton Silica Sands mine, hence is not gazetted as a road reserve. The east side of the road is not suitable as there are many obstructions along the route. The Western Power high voltage power easement also runs along the east side of the road for 1km. The west side of the road has a low voltage power line running down the entire length as well as Telstra services. As such the pipeline would need to be located approximately 20m to the west of the road. This area is undisturbed bushland and contains many wetland areas. A 16m wide easement would need to be cleared to install the pipeline. The northern most 1km of the route would need to revert to the existing Right Of Way as the road does not extend to the start point of the pipeline. There are no environmental advantages in installing the pipeline near the road.

The proponent's preferred route is option 2, with an offtake at MLV 154/155 and the pipeline being constructed within the existing DBNGP easement.

For a detailed map and location of alternative routes, refer to Appendix 1 of the ARI document (Ecos 2005).

3. Consultations

The proponent has advised that consultation has occurred with the following government agencies and stakeholders prior to lodging the ARI document (Ecos 2005):

- Department of Environment (DoE);
- Department of Conservation and Land Management (CALM);
- Department of Industry and Resources (DoIR);
- Department of Planning and Infrastructure (DPI);
- Shire of Harvey;
- Kemerton Silica Sands;
- Kemerton Power Station;
- Western Power; and
- Gnaala Karla Booja and Brunswick Mob Native Title Claimants.

As a result of the consultation process, the key issues raised were:

- native vegetation clearing;
- additional flora surveys for Declared Rare Flora;
- acid sulphate soils;
- wetland hydrogeology management;
- possible disturbance of artefacts; and
- delays causing the use of distillate being used as a fuel at the Kemerton Power station

The proponent has responded to the issues raised by ensuring that there is no disturbance to vegetation outside the existing DBNGP easement and that the cleared area is rehabilitated. Additional flora surveys have been undertaken in September 2005 with a further survey to be carried out in October 2005. The proponent has undertaken soil studies along the proposed pipeline route and developed an Acid Sulphate Soils and Dewatering Management Plan. Wetlands will be managed in accordance with the prepared Wetland Management Plan:Hydrogeological Management Plan. The proponent will also be developing a Heritage Management Agreement.

4. Relevant environmental factors

Section 44 of the *Environmental Protection Act 1986* requires the EPA to report to the Minister for the Environment on the environmental factors relevant to the proposal and the conditions and procedures, if any, to which the proposal should be subject. In addition, the EPA may make recommendations as it sees fit.

It is the EPA's opinion that the following environmental factors relevant to the proposal require evaluation in this report:

- (a) Flora and Vegetation Communities

- (b) Fauna
- (c) Wetlands
- (d) Rehabilitation, Weeds, and Dieback

Details on the relevant environmental factors and their assessment are contained in Sections 4.1 - 4.4. The description of each factor shows why it is relevant to the proposal and how it will be affected by the proposal. The assessment of each factor is where the EPA decides whether or not a proposal meets the environmental objective set for that factor.

4.1 Flora and Vegetation Communities

Description

A flora and vegetation survey was undertaken on the proposed gas pipeline route by Woodman Environmental Consulting in December 2004 and is provided in Appendix 5 of the ARI document (Ecos 2005). Woodman Environmental (2005) identified a total of 94 plant taxa, including five introduced taxa. No Declared Rare Flora (DRF) species were recorded during this survey, however two Priority Flora species were recorded. Priority 1 species *Boronia juncea subsp.juncea*, at one location and Priority 3 species, *Acacia semitrullata* at five locations along the proposed route. Five plant communities, consisting of two Woodlands and three heaths were also identified during this survey. None of the plant communities mapped along the proposed pipeline route are listed as Threatened Ecological Communities by CALM (2004).

Previous flora and vegetation surveys carried out in the Kemerton area (Bennett 2004; Bowman Bishaw Gorham 2004; Woodman Environmental 2004; Mattiske 2003; Sinclair Knight Merz 2002; Muir Environmental 1999; Armstrong and Associates 1999) have identified areas of significant vegetation and locations of Declared Rare and Priority Flora species. Figure 1b in Appendix 1 of the ARI document (Ecos 2005) shows the recorded locations of these species within the vicinity of the proposed Kemerton Lateral pipeline route. The number of species recorded during the flora surveys conducted in December 2004, were lower than would have normally been expected along the route and many annual species, including DRF species such as *Drakaea micrantha* were not recorded (Woodman 2005). This was due to the timing of the survey, not being conducted during the main flowering season for flora species. As a result, CALM recommended that additional flora surveys be undertaken during the appropriate flowering season.

During September 2005, two surveys were conducted, and a third conducted in October 2005. A single plant of *Caladenia procera* was found just off the easement. This plant is listed as Declared Rare Flora under the *Wildlife Conservation Act 1950*. The proponent proposes to place a buffer protection zone around this plant and develop a species specific management plan.

The proponent has stated that the pipeline will be located within the existing DBNGP easement and that all areas of remnant vegetation outside this easement would not be disturbed (Ecos 2005). The proponent proposes to delineate the easement boundary

by the installation of survey pegs at 50m intervals or as required to ensure line of sight.

The impact on flora and vegetation communities results from the proposed clearing of approximately 8ha of native vegetation, with the potential for loss of priority flora.

Assessment

The area considered for assessment of this factor is the proposed 5km gas pipeline route from MLV 154/155 on the DBNGP to the Kemerton Power Station.

The EPA's environmental objectives for this factor are to:

- maintain the abundance, diversity, geographic distribution and productivity of flora at species and ecosystem levels through the avoidance or management of adverse impacts and improvement in knowledge;
- maintain the abundance, species diversity, geographic distribution and productivity of vegetation communities through the avoidance or management of adverse impacts and improvement in knowledge; and
- Protect Declared Rare and Priority Flora, consistent with the provisions of the *Wildlife Conservation Act 1950*.

The EPA notes that vegetation clearing will be confined to the existing DBNGP easement and that all trench excavation and pipeline construction work would be undertaken within this easement. The EPA notes that although approximately 8ha of vegetation would initially be cleared for the pipeline route, the proponent proposes to retain large fauna habitat trees, and rehabilitate the area of disturbance. Rehabilitation of the cleared pipeline corridor is discussed further in section 4.4 of this report.

The initial flora surveys undertaken in December 2004 were not conducted during the main flowering season, and therefore DRF species that may have been present during spring were not recorded. The EPA notes however, that two additional flora surveys were undertaken in September 2005 and a third in October 2005. A single plant of the species *Caladenia procera*, was recorded during the surveys. The EPA notes that flora surveys were conducted in accordance with the EPA Guidance Statement; "*Guidance for the Assessment of Environmental Factors No. 51-Terrestrial flora and vegetation surveys for environmental impact assessment in Western Australia*" (EPA 2004b).

On advice from CALM, it is probable that not all individual plants of *Caladenia procera* species were observed during the spring flora surveys and that the vegetation remaining in this area is regarded as potential habitat for this rare orchid. The EPA recommends that condition 9 be imposed to ensure that the single *Caladenia procera* plant is managed appropriately.

The EPA considers that while the proposed pipeline route could potentially impact on two Priority Flora species, the project would not significantly impact on the

conservation status of the Priority Flora identified along the pipeline route. The EPA notes that *Acacia semitrullata* is relatively widespread in the region and that both *Acacia semitrullata* and *Boronia juncea* subsp. *juncea* have previously been recorded in areas surrounding the pipeline route. The EPA notes that the impacts on these species by the proposed pipeline would be minimal in both a local and regional context due to the small area of disturbance proposed for the pipeline.

The EPA recommends that the proponent:

- shall not disturb vegetation outside of the existing easement (recommended Environmental Condition 6);
- manages Declared Rare Flora (recommended Environmental Condition 9); and
- implements a comprehensive rehabilitation plan (recommended Environmental Condition 10).

Summary

Having particular regard to the:

- significance of the vegetation associations and flora along the proposed pipeline;
- proposed area of disturbance and previous level of disturbance; and
- proponent's management measures, and the EPA's recommended conditions;

it is the EPA's opinion that the proposal can be managed to meet the EPA's environmental objectives for this factor, provided that the recommended environmental conditions are made legally enforceable.

4.2 Fauna

Description

Fauna survey work was undertaken by M.J & A.R Bamford Consulting Ecologists in 2003 on the Kwinana-Bunbury section of the existing DBNGP route for the Strategic Environmental Review for the DBGNP Corridor Widening (BBG 2004). The area traversed by the proposed pipeline route in the Kemerton area may support some of the 6 species of fish, 10 species of frogs, 48 species of reptiles, 136 species of birds and 28 species of mammals identified during the survey (Bamford 2003).

Six fish species that may be in the Kemerton area rely on permanent water with the exception of the Priority 3 Black-striped Minnow (*Galaxiella nigrostriata*) and possibly the Mud Minnow (BBG 2004). The Black-striped Minnow is found in the Kemerton wetlands where it appears to survive in seasonal wetlands by sheltering in the burrows of koonacs (freshwater crayfish) (BBG 2004). Work undertaken by Bamford (2001) found that the Black-striped Minnow has a restricted distribution and is known only to occur in four shelter locations or refuges within the Kemerton area. The locations of these refuges is shown in Appendix 2 of the ARI document (Ecos 2005).

The pipeline trench would be excavated to approximately 1.5m deep and up to 800m of the trench would be open during the day time. Up to 36m of trench would be left open during night time to allow for pipe joining. As such, there is the potential for fauna injury or death as a result of falling into the open trench. The open area of trench would be gradually ramped out where the pipeline extends out of the trench, allowing some fauna to escape. A licensed fauna specialist would be present throughout the day to recover any fauna trapped in open trenches.

Other potential impacts on fauna include the temporary loss of habitat, crushing by mobile equipment, and impacts as a result of altered wetland hydrology.

Assessment

The EPA's environmental objective for this factor is to protect specially Protected Fauna, consistent with the provisions of the *Wildlife Conservation Act 1950*.

The EPA notes that the Black-striped Minnow (*Galaxiella nigrostriata*) has a restricted distribution in the Kemerton wetlands particularly during the summer period. The Black-striped Minnow is known to occur in four refuge sites located north east of the proposed pipeline corridor (Bamford 2001). Trench construction will be carried out during summer when water levels are lowest and water movement is below the coffee rock layer. Further measures have been taken to mitigate against changes to hydrology such as the reinstatement of existing contours and management of dewatering. CALM has also provided advice on the proposed management of this species and considered that no additional survey work was necessary provided the possible hydrological and dewatering impacts were addressed. The EPA considers there to be minimal risk from the construction and installation of the pipeline on the Priority 3 Black-striped Minnow (*Galaxiella nigrostriata*) due to the known locations of these species and the management of altered wetland hydrology.

The EPA notes the potential for fauna to be trapped in open trenches, but believes the open lengths proposed would keep fauna trapping to a minimum. As such, the EPA has recommended an environmental condition to address this. The EPA has also recommended a condition that requires a fauna clearing person to be present to recover any trapped fauna in open trenches.

The EPA notes that the fauna habitat to be disturbed is represented elsewhere in the Kemerton area and that none of the fauna species recorded in surveys in the Kemerton area have ranges restricted to the immediate area (Ecos, 2005). The EPA considers the proposal is unlikely to have a significant impact on fauna species of conservation significance given the limited area of disturbance and proposed management measures that include minimising the length of trench left open, rehabilitating the area of cleared vegetation, and mitigating against impacts to wetland hydrology.

The EPA recommends that the proponent:

- addresses impacts to fauna from open trenches (recommended Environmental Condition 7);
- retains fauna habitat trees (recommended Environmental Condition 7); and

- minimises the indirect impacts to fauna from altered hydrology (recommended Environmental Conditions 8 and 11).

Summary

Having particular regard to the:

- minimal length of trench left open during the day and overnight;
- the retention of fauna habitat trees along the easement;
- mitigation of altered hydrology; and
- proponents management measures, and the EPA's recommended conditions;

it is the EPA's opinion that the proposal can be managed to meet the EPA's environmental objective for this factor, provided that the recommended conditions are made legally enforceable.

4.3 Wetlands

Description

The proposed pipeline route dissects several Conservation Categorised Geomorphic Wetlands and one Multiple Use categorised Geomorphic Wetland. These wetland types support a high level of ecological attributes and functions. The classification and evaluation of wetlands on the Swan Coastal Plain has been endorsed under the Wetlands Conservation Policy for Western Australia 1997.

Wetlands are present for 2.1km of the 5km proposed route. The proponent estimates that approximately 3ha of wetland area would be directly cleared for the proposed pipeline and this represents less than one percent of the total area, of those wetlands dissected by the route.

As the proposed pipeline alignment dissects several basin wetlands, there is the potential for wetland hydrology to be altered and the connectivity between these wetland systems to be affected. If not managed, these impacts have the potential to extend to the whole wetland system.

The proponent has developed the following specific management measures to minimise impacts to the hydrology of the Kemerton wetland area:

1. undertaking pipeline trench construction at the appropriate time of year. Construction is expected to commence and finish during summer in order to minimise groundwater or wetland water abstraction;
2. reinstating the existing contours of the area so that surface and groundwater flows are not impeded;
3. development and implementation of a Wetland Management Plan:Hydrogeological Management Plan to ensure that potential impacts to wetlands can be managed; and

4. development of a Dewatering Management Plan to ensure that if dewatering of the trench does occur, the potential impacts can be appropriately managed.

Assessment

The EPA's environmental objectives for this factor are to:

- Maintain the integrity, ecological functions and environmental values of protected wetlands; and
- Maintain the quantity of water so that existing and potential environmental values, including ecosystem maintenance, are protected.

The EPA considers that the wetlands traversed by the proposed pipeline route have high conservation values. In accordance with the *Environmental Protection of Wetlands* Position Statement No. 4 (EPA, 2004c), it is the EPA's preference that Conservation Category Wetlands are not disturbed. However, the EPA recognises that there is an existing pipeline corridor, wetland areas have previously been disturbed but have recovered well, and consideration has been given to alternative pipeline routes. Given the previous disturbance to the area and the proponent's management measures, the EPA considers the proposed pipeline route to be acceptable.

The EPA believes that a condition specifying the timing of construction is required so that trench excavation is undertaken when water levels are lowest, minimising the potential impacts on wetlands.

The EPA notes that while these wetland areas would be disturbed, disturbance is temporary and best practice rehabilitation measures would be used to restore the ecological values of the wetland systems. The proponent has developed a Rehabilitation Plan which would be implemented to ensure that wetland areas are appropriately rehabilitated. The EPA notes that the vegetation cleared from a wetland area, would be replaced back to that specific area, in accordance with this plan.

The EPA believes that there is a potential risk associated with the occurrence of Acid Sulphate Soils and their potential to impact on wetland systems along the proposed pipeline route. The EPA believes that a condition specifying the implementation of the Acid Sulphate Soils and Dewatering Management Plan is required.

The EPA recommends that the proponent:

- Undertakes construction during summer (recommended Environmental Condition 5);
- mitigates the potential impacts to wetlands (recommended Environmental Condition 8); and
- mitigates the potential impact of acid sulphate soils (recommended Environmental Condition 11).

Summary

Having particular regard to the:

- mitigation and management of impacts to the Kemerton wetland system;
- rehabilitation of wetland areas;
- timing of trench construction; and
- proponents management measures, and EPA's recommended conditions;

it is the EPA's opinion that the proposal can be managed to meet the EPA's environmental objective for this factor, provided that the recommended conditions are made legally enforceable.

4.4 Rehabilitation, Weeds and Dieback

Description

The proposed pipeline route would require the clearing of approximately 8ha of native vegetation. It is recognised that the vegetation along this project easement is locally and regionally significant and also sensitive with respect to its position within the Kemerton wetland system that supports threatened ecological communities, and threatened flora and fauna species (Ecos 2005).

The existing DBNGP easement was originally cleared in the 1980's, however vegetation has regrown since this disturbance. Investigations of the easement by Woodman Environmental in 2005 indicate that the wetland communities have recovered from the original pipeline installation to a level where the regenerating communities closely resemble the adjacent undisturbed vegetation. The dunal woodland communities have not regenerated to the same extent as the wetland communities, due to the removal of large trees from the easement, which was done to protect the integrity of the pipe. The proponent has included the establishment of native vegetation in woodland areas in the Rehabilitation Plan (Ecos, 2005).

Vegetation clearing would be restricted to a working width within the existing DBNGP easement. Following completion of the gas pipeline construction, the proponent proposes to rehabilitate the cleared area. The proponent has developed a Rehabilitation Plan in consultation with CALM and has established suitable completion criteria and monitoring.

There is also potential for weeds and dieback (*Phytophthora cinnamomi*) to be spread along the pipeline route. The invasive weed species *Watsonia meriana* var. *bulbillifera* and *Leptospermum laevigatum* have been recorded on the easement (Woodman 2005). The proponent proposes to eradicate these species prior to clearing of the easement. In addition, weed covers and species will be included in the rehabilitation monitoring. The proponent proposes to implement hygiene protocol to manage weeds along the pipeline route. Dieback will be managed in accordance with the hygiene protocol as outlined in the Environmental Management Plan and Rehabilitation Plan.

Assessment

The EPA's environmental objectives for this factor are to:

- To ensure that post-disturbance landforms are stable and comparable to those which existed pre-disturbance;
- To maintain the integrity, ecological functions and environmental values of the soil and landform;
- To ensure that rehabilitation achieves an acceptable standard compatible with the intended landuse, and consistent with the appropriate criteria; and
- To return self-sustaining native vegetation which is as close as possible to the pre-disturbance vegetation in species composition and ecological function.

The EPA notes that the proponent has developed a Rehabilitation Plan in consultation with CALM and has recommended that a condition be imposed to implement this plan which addresses:

- best practice rehabilitation procedures;
- weed management;
- dieback management;
- priority and rare flora management;
- protection of significant flora species;
- resource management;
- soil profile and landform; and
- establishment of native vegetation in woodland areas;

Comprehensive rehabilitation completion criteria has also been developed, and the EPA has recommended that a condition should also be imposed to ensure appropriate rehabilitation is achieved.

The EPA recommends that the proponent:

- rehabilitate the area of cleared vegetation (recommended Environmental Condition 10); and
- manage the spread of weeds and dieback along the pipeline route (recommended Environmental Condition 10).

Summary

Having particular regard to the:

- vegetation clearing being restricted to a 16m wide corridor;
- a comprehensive Rehabilitation Plan with completion criteria; and
- proponents management measures, and EPA's recommended conditions;

it is the EPA's opinion that the proposal can be managed to meet the EPA's environmental objective for this factor, provided that the recommended conditions are made legally enforceable.

5. Conditions

Section 44 of the *Environmental Protection Act 1986* requires the EPA to report to the Minister for the Environment on the environmental factors relevant to the proposal and on the conditions and procedures to which the proposal should be subject, if implemented. In addition, the EPA may make recommendations as it sees fit.

The EPA has set out recommended environmental conditions in Appendix 2 of this report.

6. Other Advice

The EPA notes that while advising that this proposal can be managed so as not to compromise the EPA's objectives, it should not be seen as a precedent that future gas pipelines within this, and other environmentally sensitive areas of the existing DBNGP corridor would be considered acceptable. The EPA reiterates its earlier advice set out in its Section 16(e) report *Dampier to Bunbury Natural Gas Pipeline Corridor Widening – Kwinana to Bunbury Project* (EPA 2004a), that its preference is that future pipelines are located in an alternative easement which avoids environmentally sensitive areas.

7. Conclusions

The EPA has considered the proposal by DBNGP (WA) Nominees Pty Ltd to construct and operate a 5km pipeline from MLV 154/155, on the DBNGP, to supply gas to the Kemerton Power Station.

The EPA considers that the impacts to flora and vegetation as a result of the proposed clearing and trench construction, are able to be managed by restricting clearance and undertaking rehabilitation. The EPA considers it unlikely that this proposal would result in a high level of fauna mortality provided that open trench length is restricted. The EPA considers that the potential impacts to wetlands are not likely to be significant, given the timing of proposed trench construction, and that rehabilitation will occur in wetland areas.

The EPA has concluded that the proposal is capable of being managed in an environmentally acceptable manner such that it is most unlikely that the EPA's objectives would be compromised, provided there is satisfactory implementation of the recommended conditions as set out in Appendix 2.

8. Recommendations

The EPA submits the following recommendations to the Minister for the Environment:

1. That the Minister notes that the proposal being assessed is for construction and operation of a 5km pipeline from MLV 154/155, on the Dampier-Bunbury Natural Gas Pipeline (DBNGP), to supply gas to the Kemerton Power Station;
2. That the Minister considers the report on the relevant environmental factors as set out in Section 4;
3. That the Minister notes that the EPA has concluded that it is unlikely that the EPA's objectives would be compromised, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 2; and
4. That the Minister imposes the conditions and procedures recommended in Appendix 2 of this report.

Appendix 1

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Woodman Environmental Consulting Pty Ltd (2004) *Kemerton Sub-station Strategic Review Flora and Vegetation Assessment*. Unpublished report prepared for Western Power Corporation

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Appendix 2

Recommended Environmental Conditions

RECOMMENDED CONDITIONS AND PROCEDURES

**STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED
(PURSUANT TO THE PROVISIONS OF THE
ENVIRONMENTAL PROTECTION ACT 1986)**

KEMERTON LATERAL GAS PIPELINE,
KEMERTON, SHIRE OF HARVEY

Proposal: The construction and operation of a five kilometre pipeline from Main Line Valve 154/155, on the Dampier to Bunbury Natural Gas Pipeline, to supply gas to the Kemerton Power Station, as documented in schedule 1 of this statement.

Proponent: DBNGP (WA) Nominees Pty Limited

Proponent Address: Level 7 GHD House, 239 Adelaide Terrace, PERTH WA 6823

Assessment Number: 1604

Report of the Environmental Protection Authority: Bulletin 1204

The proposal referred to above may be implemented by the proponent subject to the following conditions and procedures:

1 Implementation

1-1 The proponent shall implement the proposal as documented in schedule 1 of this statement subject to the conditions and procedures of this statement.

2 Proponent Nomination and Contact Details

2-1 The proponent for the time being nominated by the Minister for the Environment under section 38(6) or (7) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal until such time as the Minister for the Environment has

exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person as the proponent for the proposal.

- 2-2 If the proponent wishes to relinquish the nomination, the proponent shall apply for the transfer of proponent and provide a letter with a copy of this statement endorsed by the proposed replacement proponent that the proposal will be carried out in accordance with this statement. Contact details and appropriate documentation on the capability of the proposed replacement proponent to carry out the proposal shall also be provided.
- 2-3 The nominated proponent shall notify the Department of Environment of any change of contact name and address within 60 days of such change.

3 Commencement and Time Limit of Approval

- 3-1 The proponent shall substantially commence the proposal within five years of the date of this statement or the approval granted in this statement shall lapse and be void.

Note: The Minister for the Environment will determine any dispute as to whether the proposal has been substantially commenced.

- 3-2 The proponent shall make application for any extension of approval for the substantial commencement of the proposal beyond five years from the date of this statement to the Minister for the Environment, prior to the expiration of the five-year period referred to in condition 4-1.

The application shall demonstrate that:

- 1.the environmental factors of the proposal have not changed significantly;
- 2.new, significant, environmental issues have not arisen; and
- 3.all relevant government authorities have been consulted.

Note: The Minister for the Environment may consider the grant of an extension of the time limit of approval not exceeding five years for the substantial commencement of the proposal.

4 Compliance Audit and Performance Review

- 4-1 The proponent shall prepare an audit program and submit compliance reports to the Department of Environment which address:

- 1.the status of implementation of the proposal as defined in schedule 1 of this statement;
- 2.evidence of compliance with the conditions and commitments; and
- 3.the performance of the environmental management plans and programs.

Note: Under sections 48(1) and 47(2) of the *Environmental Protection Act 1986*, the Chief Executive Officer of the Department of Environment is empowered to monitor the compliance of the proponent with the statement and should directly receive the compliance documentation, including environmental management plans, related to the conditions, procedures and commitments contained in this statement.

- 4-2 The proponent may submit a report prepared by an independent auditor to the Chief Executive Office of the Department of Environment on each condition/commitment of this statement which requires the preparation of a management plan, programme, strategy or system, stating whether the requirements of each condition/commitment have been fulfilled within the timeframe stated within each condition/commitment.

5 Timing of Works

- 5-1 The proponent shall only undertake open trench work between January and April 2006 (inclusive) unless otherwise authorised by the Minister for the Environment.

6 Vegetation Disturbance

- 6-1 Prior to ground-disturbing activities, the proponent shall clearly delineate on the ground the boundaries of the 16-metre wide pipeline easement.
- 6-2 The proponent shall not cause or allow disturbance of vegetation outside the delineated pipeline easement, as referred to in Condition 6-1.

7 Fauna

- 7-1 The proponent shall limit the length of open trench to 800 metres during day time.
- 7-2 The proponent shall limit the length of open trench to 36 metres during night time.
- 7-3 Prior to vegetation clearing, the proponent shall mark significant habitat trees of sufficient age to form nesting hollows for hollow-nesting birds and mammals, in consultation with the Department of Conservation and Land Management and the Department of Environment. The proponent shall not fell marked trees, except in the case where a habitat tree occurs in the direct line of the proposed pipeline.
- 7-4 The proponent shall employ a “fauna clearing person” to remove fauna from the trench. The “fauna clearing person” shall be able to demonstrate suitable experience to obtain a fauna handling licence from the Department of Conservation and Land Management.
- 7-5 The area of open trench shall be cleared by a “fauna clearing person” each day before 10 a.m. and then subsequently during the day at intervals not exceeding 2 hours, and then half an hour prior to backfilling the pipeline trench at the end of each day.

- 7-6 In the event of significant rainfall, the proponent shall, following the clearing of fauna, from the trench, pump out any pooled water in the open trench (with the exception of groundwater) and discharge it via a mesh (to dissipate energy) to adjacent vegetated areas.

Definition:

“fauna clearing persons” means employees whose responsibility is to daily walk the open trench to recover and record fauna found within the trench.

8 Wetlands

- 8-1 The proponent shall implement and comply with the Wetlands Management Plan:Hydrogeological Management Plan, as contained in Appendix 4 of the proponent’s *Assessment on Referral Information* document dated October 2005.
- 8-2 The Wetlands Management Plan:Hydrogeological Management Plan referred to in condition 8-1 may be modified from time to time with the approval of the Minister for the Environment.

9 Flora

- 9-1 Prior to vegetation clearing commencing, the proponent shall submit a report which details the results of the spring flora surveys undertaken in 2005, to the requirements of the Minister for the Environment, on advice of the Department of Conservation and Land Management.

This report shall address:

1. the recorded location of any rare and priority flora species;
 2. a description of the habitat in which specially protected flora species were found, and the extent of the contiguous area of the same habitat in the local area;
 3. the degree of impact of the proposed works on specially protected flora species or its identified contiguous habitat;
 4. the proposed management strategy for the protection of rare or priority flora species; and
 5. post activity monitoring plan of specially protected flora species.
- 9-2 The proponent shall not disturb the single plant of *Caladenia procera*, from within its immediate surrounding habitat currently demarcated with a minimum 10 metre square buffer, recorded during the spring 2005 flora surveys.

10 Rehabilitation

- 10-1 The proponent shall implement and comply with the Rehabilitation Plan, as contained in Appendix 7 of the proponent’s *Assessment on Referral Information* document dated October 2005.

10-2 The Rehabilitation Plan referred to in condition 10-1 may be modified from time to time with the approval of the Minister for the Environment.

10-3 The proponent shall carry out rehabilitation to achieve the following completion criteria as specified in the Rehabilitation Plan:

Completion Criteria:

1. Weeds to be eradicated prior to the commencement of clear and grade and 100% compliance with the weed hygiene protocol;
2. 100% compliance with the dieback hygiene protocol;
3. Vegetation and topsoil to be cleared and stored in accordance with the Environmental Management Plan;
4. Significant plant species to be protected in accordance with the rehabilitation plan;
5. All equipment, materials and litter to be removed from the Right-Of-Way;
6. Natural contours to be re-instated to pre-disturbance conditions;
7. No active erosion rills greater than 10 metres x 0.1 metres
8. No bare patches longer than 10 metres after 12 and 24 months;
9. The foliage cover of declared and environmental weeds on the ROW to be no greater than in surrounding undisturbed areas at 12 and 24 months;
10. A minimum of two native plants per square metre when averaged over the entire area rehabilitated at 12 months;
11. Percentage foliage cover of native species indigenous to each plant community to be greater than or equal to 50% of foliage cover in undisturbed areas of similar vegetation types outside the easement at 24 months; and
12. Species richness greater or equal to 50% of richness in undisturbed areas of similar vegetation types outside the easement at 24 months.

10-4 The proponent shall continue to manage rehabilitation of the pipeline route until the completion criteria, referred to in condition 10-3, have been achieved in accordance with the requirements of the Minister for the Environment on advice of the Environment Protection Authority and the Department of Conservation and Land Management.

Note: The proponent has obligations under the Department of Industry and Resources legislation to maintain the vehicle access track. Certain completion criteria may not be achievable within the access track.

11 Acid Sulphate Soils and Dewatering

11-1 Prior to trenching and excavation activities, the proponent shall amend the Acid Sulphate Soils and Dewatering Management Plan, as contained in Appendix 3 of the proponent's *Assessment on Referral Information* document dated October 2005, to demonstrate that all practical measures have been included to manage the potential impacts from acid sulphate soils and dewatering activities, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

- 11-2 The proponent shall implement and comply with the Acid Sulphate Soils and Dewatering Management Plan, as amended in accordance with condition 11-1.
- 11-3 The proponent shall make the Acid Sulphate Soils and Dewatering Management Plan, referred to in condition 11-2 publicly available.
- 11-4 The Acid Sulphate Soils and Dewatering Management Plan referred to in condition 11-2 may be modified from time to time with the approval of the Minister for the Environment.

Procedures

- 1 Where a condition states “to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority”, the Environmental Protection Authority will provide that advice to the Department of Environment for the preparation of written notice to the proponent.
- 2 The Environmental Protection Authority may seek advice from other agencies or organisations, as required, in order to provide its advice to the Department of Environment.
- 3 Where a condition lists advisory bodies, it is expected that the proponent will obtain the advice of those listed as part of its compliance reporting to the Department of Environment.

Notes

- 1 The Minister for the Environment will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environment over the fulfilment of the requirements of the conditions.
- 2 The proponent is required to apply for a Ground Water Abstraction Licence for this project in order to conduct dewatering activities in accordance with the *Rights in Water and Irrigation Act 1914*.

Schedule 1

The Proposal (Assessment No. 1604)

The proposal is to construct and operate a pipeline to supply gas to the Kemerton Power Station (located approximately 22 kilometres north-east of Bunbury nearby the Kemerton Industrial Estate) and to construct a meter station at the power station site (Figure 1). The pipeline is 5 kilometres in length, connecting at Main Line Valve 154/155 on the Dampier to Bunbury Natural Gas Pipeline and runs parallel to the existing Dampier to Bunbury Natural Gas Pipeline until it deviates west to connect to the Kemerton Power Station (Figure 2). The pipeline is to be installed in the existing 16-metre wide DBNGP easement.

The main characteristics of the proposal are summarised in Table 1 below.

Table 1 – Key Proposal Characteristics

Element	Description
Proponent	DBNGP (WA) Nominees Pty Ltd
Location	Within the Kemerton Industrial Estate, 22 kilometres North East of Bunbury.
Proposed Action	Construct a 300 millimetre diameter pipeline adjacent to the existing DBNGP corridor to provide gas to the Kemerton Power Station.
Route Alignment	The route begins at MLV 154/155 and runs south within the existing DBNGP easement for approximately 5 kilometres. The route then deviates west for approximately 100 metres to the Kemerton Power Station site.
Route Length	Approximately 5 kilometres.
Proposed Tenure	The majority of the pipeline will be constructed wholly within the existing DBNGP easement. The exception is the final 100 metres west to the power station. This will be gazetted as separate easement under the <i>Petroleum Pipelines Act 1969</i> . The first 4 kilometres of the easement traverses freehold land owned by the Kemerton Silica Sands mine. The rest of the area is managed by the West Australian Land Authority.
Area of temporary vegetation clearance	Approximately 8 hectares.
Maximum length of trench to be left open during day time	800 metres.
Maximum length of trench to be left open during night time	36 metres.
Construction Duration	Approximately 5 weeks

Figures (attached)

Figure 1 – Kemerton Pipeline Site Location Diagram

Figure 2 – Kemerton Pipeline Site Plan

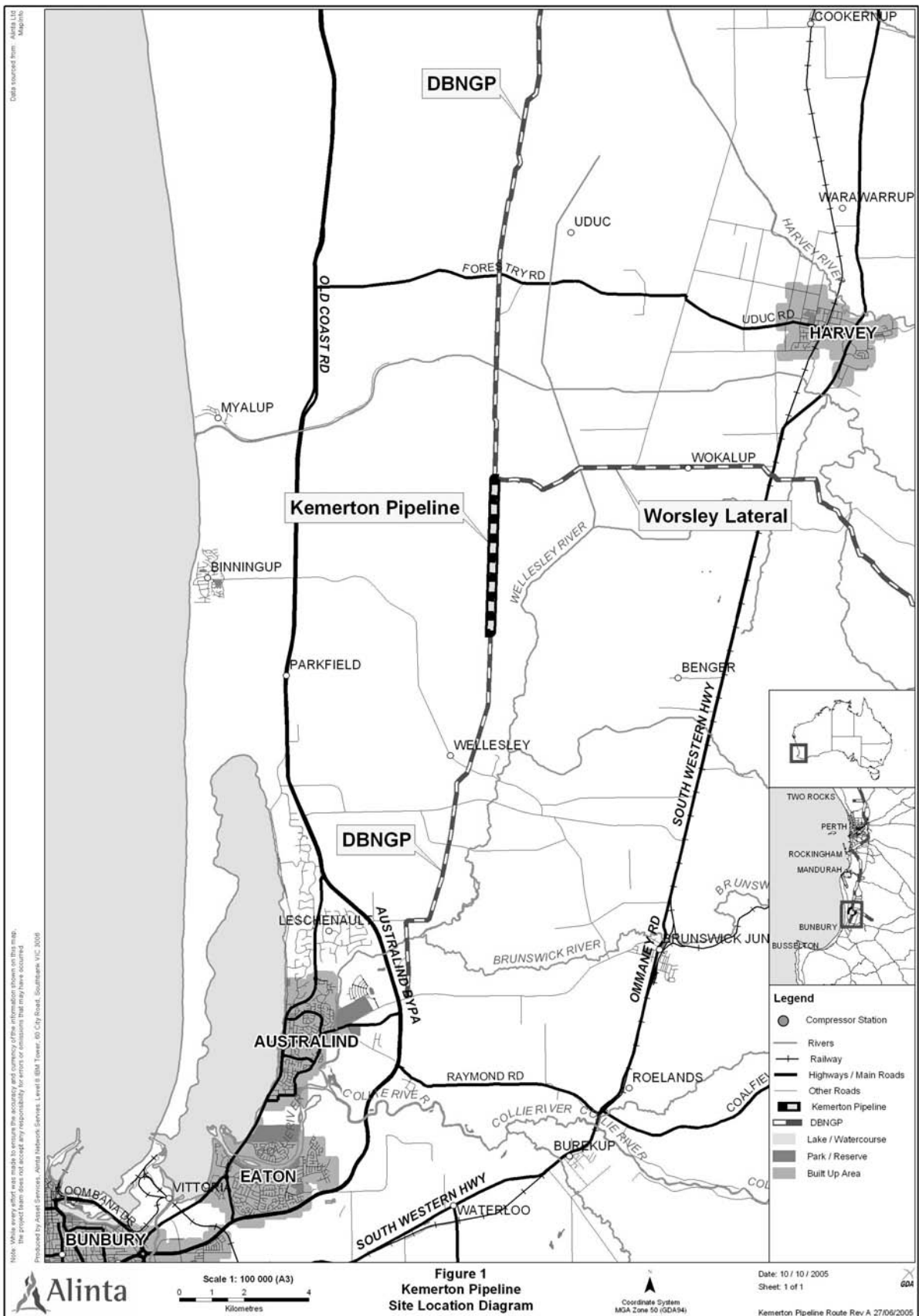


Figure 1 – Kemerton Pipeline Site Location Diagram

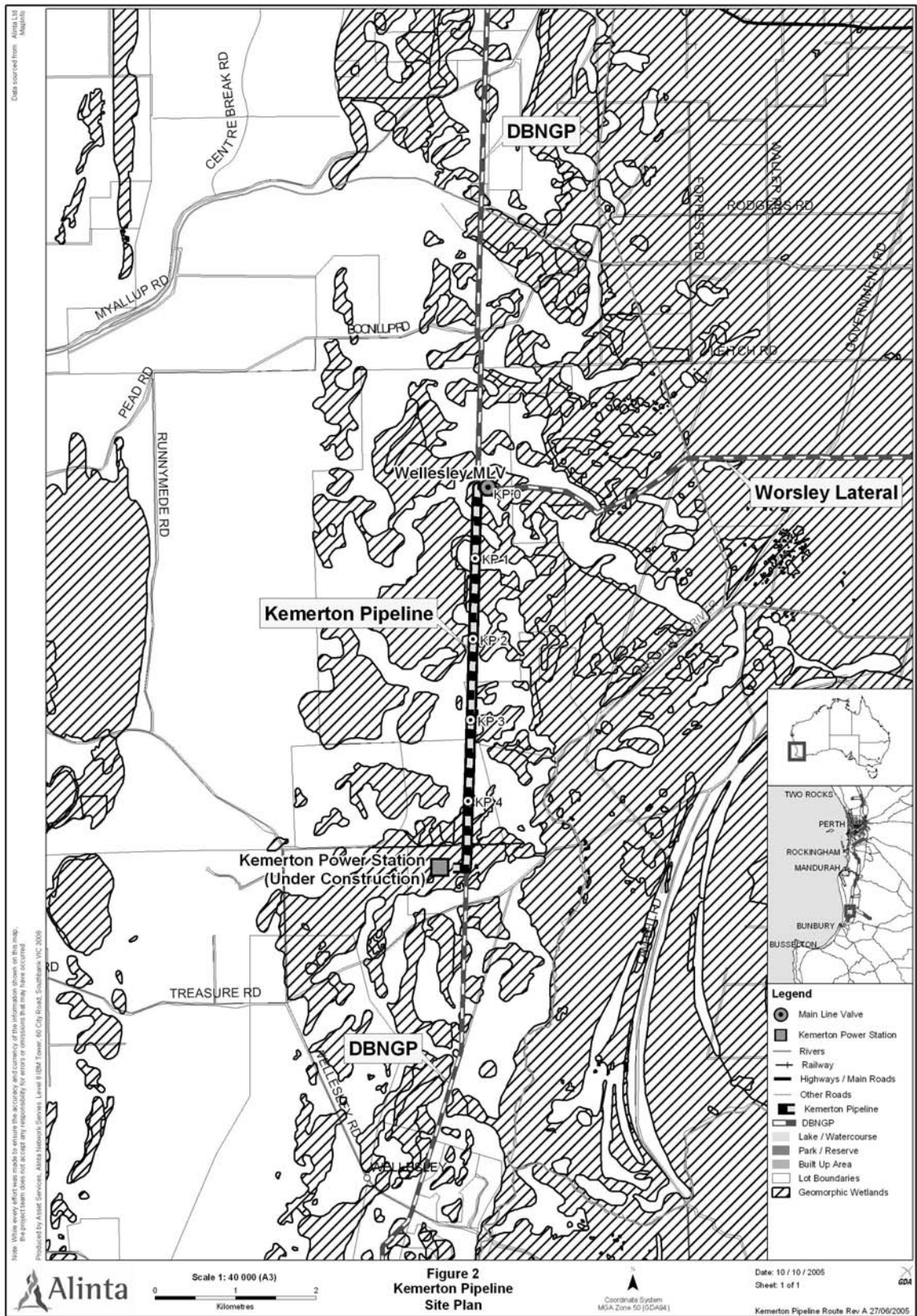


Figure 2 – Kemerton Pipeline Site Plan