

Hallett Lateral Pipeline Pipeline Licence Extension



Environmental Impact Report



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Executive Summary

Epic Energy SA Pty Ltd plan to construct a 720m pipeline to supply natural gas to the proposed AGL Hallett Peak Load Power Station, which is located 21km north-west of Hallett. The pipeline will travel from the Moomba-Adelaide Pipeline to a meter station adjacent to the proposed power station (refer to Figure 1).

This Environmental Impact Report (EIR) has been prepared in support of an application for an extension of Epic Energy's existing Moomba to Adelaide Pipeline Licence No. 1 to include the proposed Hallett Lateral Pipeline. The Moomba to Adelaide Pipeline Licence No.1 currently includes the main Moomba to Adelaide pipeline and a number of associated extensions, laterals and loopings.

This document outlines the environmental hazards associated with the construction and operation of the Hallett Lateral Pipeline and identifies the following potential impacts:

- Weed / disease introduction; and
- Erosion or compaction of soils.

The EIR outlines general mitigation strategies that address each of the above potential impacts. Detailed task-specific management and mitigation requirements will be included in an Environmental Management Plan.

A Statement of Environmental Objectives has been developed in conjunction with this EIR, which outlines the environmental objectives that Epic Energy are required to achieve and the criteria upon which objectives shall be assessed.

1 Introduction

1.1 Background

Epic Energy SA Pty Ltd (Epic Energy) plans to construct a pipeline to supply natural gas to the proposed AGL Hallett Peak Load Power Station (Plate 1). The pipeline, referred to as “the Hallett Lateral Pipeline”, will be in the order of 720m long, commencing at the Moomba-Adelaide Gas Pipeline, and terminating at a meter station adjacent to the proposed AGL Hallett Peak Load Power Station Site. The proposed site is off the Booborowie Road, approximately 21km northwest of Hallett (Figure 1).

Epic Energy currently own and operate the Moomba to Adelaide Pipeline under Pipeline Licence No.1, which authorises operation of the Moomba to Adelaide Pipeline and a number of pipeline extensions, laterals and loopings. It is proposed that the Hallett Lateral Pipeline be similarly authorised as an extension to Pipeline Licence No.1.

1.2 Regulatory Framework

To support an application for the Moomba to Adelaide Licence No. 1 extension, Epic Energy must prepare:

- An Environmental Impact Report (EIR) - in accordance with Section 97 of the *South Australian Petroleum Act 2000* (the Act) and Regulation 10 of the *Petroleum Regulations 2000* (the Regulations); and
- A Statement of Environmental Objectives (SEO) - in accordance with Section 99 and 100 of the Act and Regulations 12 and 13.

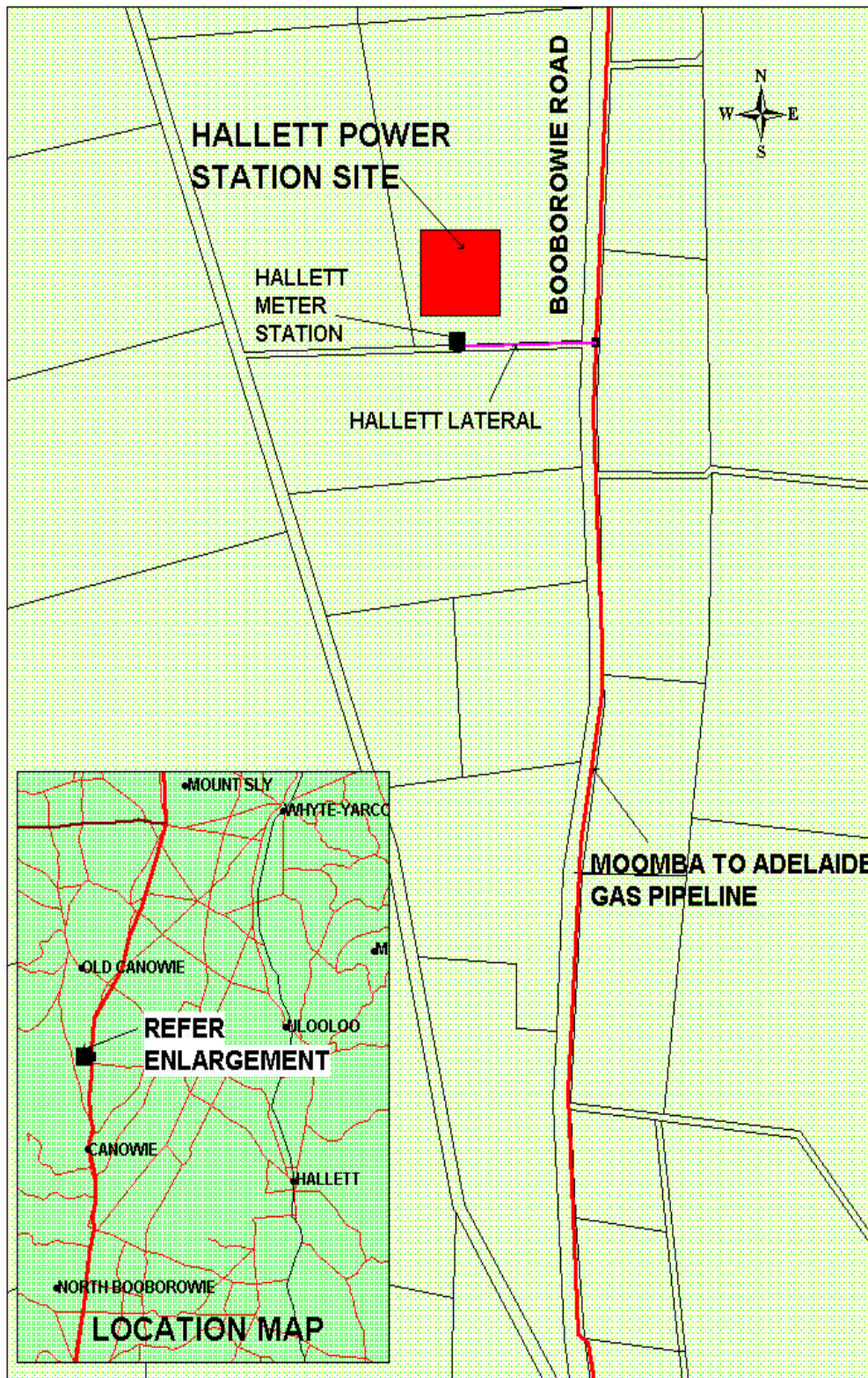
This document fulfils the requirements of an EIR as outlined in the Petroleum Act and Regulations.

1.3 About This Document

This EIR has been prepared as a component of Epic Energy's application for an extension of Pipeline Licence No.1 to include the proposed Hallett Lateral Pipeline. The document:

- Provides a description of the Hallett Lateral Pipeline project (Section 2);
- Describes the specific features of the environment that can reasonably be expected to be affected by pipeline construction and operation activities (Section 3);
- Identifies potential environmental impacts (Section 3);
- Proposes measures to mitigate potential environmental impacts (Section 3); and
- Summarises stakeholder consultation (Section 4).

Figure 1: Proposed Hallett Lateral Pipeline Route



The SEO has been developed in conjunction with this EIR and outlines the environmental objectives that Epic Energy is required to achieve and the criteria upon which the objectives are to be assessed. The SEO has been developed on the basis of information provided in this EIR.

1.4 About Epic Energy

Epic Energy is one of Australia's largest transmission companies, with more than \$3.5 billion invested in energy infrastructure. Epic Energy owns 3,300km of pipeline in Australia and operates another 891km on behalf of other owners. Epic Energy's major transmission pipelines are:

- The Dampier to Bunbury Natural Gas Pipeline in Western Australia;
- The South West Queensland Pipeline in Queensland; and
- The Moomba to Adelaide Pipeline system in South Australia.

Epic Energy's gas customers include electricity generators, gas distribution companies and industrial users.

Epic Energy was established in 1994 and employs more than 250 people. Major shareholders in the company are El Paso Energy Corporation, Consolidated Natural Gas Company, AMP Asset Management Australia Limited, Deutsche Asset Management (Australia) Limited and Hastings Funds Management Limited.

1.5 Environmental Commitment

Epic Energy is committed to responsible environmental management of all phases of the Hallett Lateral Pipeline project. All planning, construction and operation activities will be conducted in accordance with Epic Energy's Environmental Policy (Appendix A). Epic Energy is committed to achieving the environmental objectives outlined in the corresponding SEO.

1.6 Environmental Management System

Epic Energy has developed and implemented a detailed Environmental Management System (EMS) which applies to all of Epic Energy's activities. The following section details the key components of the Environmental Management System that are relevant to the Hallett Lateral Pipeline.

1.6.1 Environmental Management Plans

Epic Energy shall develop an Environmental Management Plan (EMP) for the construction of the Hallett Lateral Pipeline. The EMP contains detailed task-specific control measures to ensure that the environmental objectives for the project will be met. The EMP also details how environmental issues will be managed during pipeline construction including:

- Responsibilities;
- Induction and Training;
- Inspection, Monitoring and Auditing;

- **Consultation; and**
- **Reporting**

Epic Energy's existing EMP for Operations details the environmental control measures for pipeline operations. Implementation of these measures will ensure that SEO objectives for operations are met.

1.6.2 Job Environmental Analysis

Prior to the commencement of each construction activity (eg. clear & grade, trenching), a Job Environmental Analysis (JEA) will be completed. The JEA will identify the specific environmental objectives and hazards associated with the particular type of construction activity and will receive approval from Epic Energy prior to the commencement of the activity.

JEA's will also be completed during pipeline operations for activities that could potentially have a significant impact on the environment.

Completed and approved JEA's are a designated hold and witness point in Epic Energy's inspection and test plan.

1.6.3 Environmental Monitoring Stations

Environmental Monitoring Stations (EM Stations) will be installed at representative locations along the pipeline construction route. Photographs will be taken along the easement at each location prior to construction, monthly during construction and immediately following restoration. EM Station locations and records will be maintained during operations as part of Epic Energy's EMS.

2 Project Description

2.1 Hallett Lateral Pipeline Alignment

The proposed pipeline will be approximately 720m long and commence at the Moomba-Adelaide Pipeline located in the Booborowie Road Reserve. The route travels west from the Moomba-Adelaide Pipeline, crossing Booborowie Road, and continuing through cropped paddocks located north of an unnamed road (Plate 2). The unnamed road is west of Booborowie Road approximately 4.5km south of the Hallett to Jamestown Road. The pipeline will terminate at a Meter Station in the southeastern corner of the AGL Hallett Peak Load Power Station Site, Lot 76.

2.2 Design and Engineering

The Hallett Lateral Pipeline will be designed in accordance with the Australian pipeline standard AS2885: 1997 - Gas and Liquid Petroleum. ANSI B31.3 will apply to piping specifications at the outlet flange of the hot-tap isolation valve, and the above ground section of piping on the inlet to the Meter Station. Key engineering and design features are outlined in Table 2-1.

Table 2-1: Engineering and Design Features

Feature	Details
Outside diameter	200 mm
Wall thickness	8mm
Grade	API 5L X42
Design Factor	0.72
Location Class	R1
MAOP	7,300 KPag
Operating Pressure	5,500 KPag
Coating	High Density Polyethylene (HDPE)
Cathodic Protection	Sacrificial Anode
Joint Coating	Denso S40 Pipeline Wrap
Depth of Cover	1,200 mm

2.3 Construction

Standard pipeline construction practices will be adopted for the Hallett Lateral Pipeline project. Generally construction activities will follow the sequence outlined in Table 2-2.

Table 2-2: Pipeline Construction Sequence

Construction Activity	Description
Detailed Survey	Engineering, environmental and cultural heritage surveys are used both in routing and to determine if any special construction techniques or mitigation measures are required. Once the preferred pipeline route has been determined, then the centreline is surveyed and engineering aspects are finalised. Markers (pegs) are placed to identify pipeline route, centreline and right-of-way.
Fencing	Severed fences are replaced with construction gates.
Clear and Grade	Graders and bulldozers are used to clear the right-of-way of vegetation and topsoil ready for construction to commence. Vegetation and topsoil is stockpiled separately on the right-of-way. Topsoil will only be cleared from the passing lane on the working side, and stockpiled in the adjacent area.
Trenching	After the route is cleared, trenches for the pipeline are dug either by a trenching machine or excavator. Trench spoil is stockpiled on the right-of-way, usually on the non-working side.
Stringing	Steel pipe is trucked to the construction site and sections, each approximately 18 metres long, are laid end-to-end next to the trench. The sections are placed on sandbags that are raised on blocks or wood (timber skids), to protect the pipe from corrosion and coating damage.
Bending	Where required, pipe sections are bent to match changes either in elevation or direction of the route.
Welding and Joint Coating	Pipe sections are welded together. The area around the weld is then sand blasted and coated, with the same protective coating as the rest of the pipe, to reduce corrosion.
X-raying	The pipes are inspected using x-ray equipment as per AS 2885.2-1995.
Padding	Where required, padding machines are used to sift the excavated subsoil to remove coarse materials. To protect the pipe coating the remaining fine material is used to pad beneath and on top of the buried pipe.
Lowering-in	Sidebooms (bulldozers with cranes) are used to lower the welded pipe into the trench.
Backfilling	Trench spoil is returned to the trench and material compacted to minimise risk of subsidence of material over the pipe.
Pressure Testing	Pipeline integrity is verified using hydrostatic testing in accordance with AS 1978. During hydrostatic testing the pipeline is capped with test manifolds, filled with water and pressurised up to 125% of operating pressure for a minimum of two hours. A 24-hour leak test then follows. Providing it meets water quality guidelines hydrotest water is discharged to the surrounding environment. If water fails to meet quality guidelines it will be treated prior to disposal eg. by chemical neutralisation. Hydrotest water is often treated with biocide, oxygen scavengers and corrosion inhibitors prior to testing, however it is unlikely that these chemicals will be used during testing of the Hallett lateral due to its small size and subsequent short period of testing.
Restoration and Rehabilitation	Environmental specialists oversee restoration procedures. The easement is recontoured to match surrounding landform and erosion controls constructed where appropriate. Separately stockpiled topsoil is then respread evenly across the easement and any cleared vegetation placed across the easement, to assist in soil retention and provision of seed stock.
Signage	Information signs are erected along the easement as per AS 2885.1-1997.

The construction working area (right-of-way) will be 25m and partitioned as illustrated in Figure 2.

Road crossings will be carried out in accordance with local municipality requirements, the Pipeline Code of Practice and AS 2885.1-1997.

Pipeline construction is scheduled to commence late October / early November and is expected to be completed in approximately 14 days. Facilities are scheduled to be commissioned by 1st December 2001.

The construction workforce is expected to consist of approximately 20 people, including the project management and pipe supply/distribution personnel.

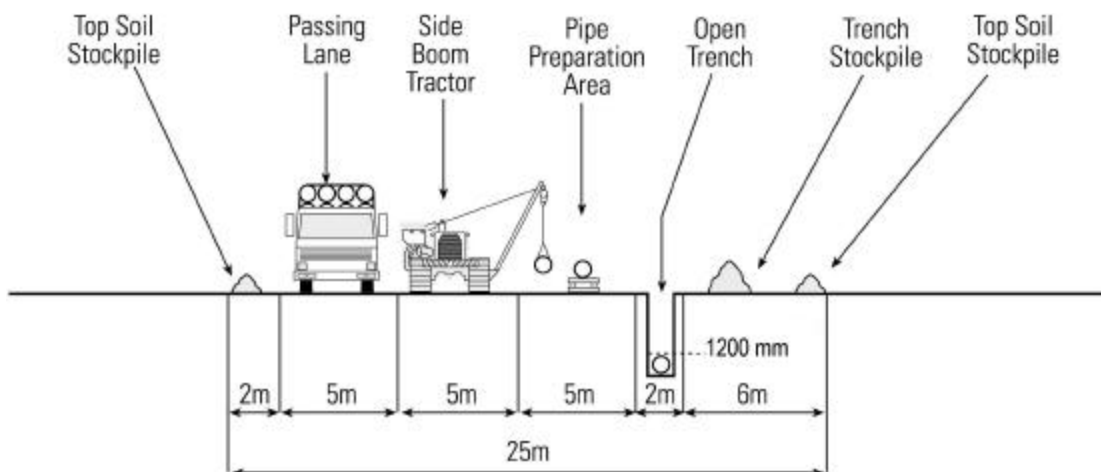


Figure 2: Construction Right-of-Way

2.4 Operation

Pipeline commissioning is scheduled for 1st December 2001. Gas delivery will be controlled remotely from Epic Energy's Gas Control Centre in Perth. Back-up operating facilities are provided by staff at Epic Energy's Southern Depot at Dry Creek.

Day-to-day operations of natural gas transmission pipelines pose few environmental hazards. Field operations undertake regular route inspections and maintain ongoing liaison with landholders as required. They will respond to maintenance requirements such as erosion control and weed control, as necessary.

2.5 Decommissioning

Epic Energy is committed to decommissioning the pipeline in accordance with the regulatory requirements and accepted current environmental best practice at the time of decommissioning.

Currently decommissioning procedures require the removal of all above ground infrastructure and the restoration of associated disturbed areas.

At the time of decommissioning a decision will be made regarding the opportunities for future use of the pipeline. If no longer required, the pipeline will be purged of gas and below ground facilities allowed to gradually degrade in-situ. If however, it is considered that the pipeline may offer some future benefits, it will be filled with an inert material and the cathodic protection system maintained to prevent corrosion. In either case, all above ground facilities will be removed.

3 Management of Environmental Issues

This chapter describes the existing environment along the proposed pipeline route, the potential impacts to the environment as a result of pipeline construction/operation, and proposed impact mitigation strategies. Identification of potential impacts and mitigation strategies are based on environmental issues (eg. soil, flora, heritage, etc.) rather than construction activity (eg. clearing, trenching, and welding). More detailed management procedures for specific project tasks will be included in an Environmental Management Plan (EMP), which is part of Epic Energy's EMS commitments (Section 1.5). Completed and approved JEA's will form designated hold and witness points in Epic Energy's inspection and test plans.

3.1 Climate

The project area lies in the mid-north of South Australia, located between the Porcupine and Brown Hill Ranges, northwest of Hallett. The area has a well-defined temperate climate, with long warm dry summers and cool wet winters. Temperatures range from a mean minimum of 3.4°C in July to a mean maximum of 30.2°C in January. Rainfall has a strong seasonal distribution (i.e. distinct winter rainfall) and a mean annual rainfall of 555.6mm at Bundaleer Forest reserve near Jamestown (www.bom.gov.au 2001).

3.2 Soils and Terrain

3.2.1 Existing Environment

The project area is characterised by gently undulating to rolling arable slopes. The Mid-North Ranges are dominated by ridges and valleys developed on folded sediments. Laterite is preserved on some of the crests, with silcrete being present on midslopes.

Soils are characterised as red-brown earths or hard red duplex soils. Sandy to clayey loam surfaces overlay red-brown clay subsoil. Red-brown earths are the dominant soil in the region and have a low potential for wind erosion, but are more prone to water erosion associated with a decline in organic matter and structure due to cultivation.

There are no defined watercourses¹ within the project area.

The majority of groundwater in the mid-north is found in low yield fractured rock aquifers. This is spatially variant and reliant upon localised recharge (Department for Water Resources 2000). There are no expected impacts on groundwater.

3.2.2 Potential Impacts

Construction of the pipeline may result in the following potential adverse effects to soils and terrain:

- Possible erosion associated with earthworks (eg. erosion of stockpiled soil);
- Compaction of soils;
- Subsidence over the pipeline;
- Changes in soil structure through mixing of topsoil and subsoil; and
- Contamination of soils by fuels, oils or chemicals.

3.2.3 Impact Mitigation

The above potential impacts can be mitigated through the application of appropriate mitigation strategies. These include:

- Restriction of construction activities to the construction right-of-way;
- Construction will be scheduled for dry periods of the year. In the event of rain and wet soils, movement of vehicles and equipment along right-of-way will be avoided;
- Any areas of compacted soil will be ripped as part of reinstatement works;
- The right-of-way will be reinstated promptly upon completion of construction works;
- Hydrotest water will be tested before disposal to meet water quality guidelines;
- Implementation of appropriate storage and handling procedures for fuels and chemicals (eg. labelling, bunding);
- Topsoil and subsoil to be stockpiled separately;
- Trench spoil will be returned to the trench and compacted; and
- Construction activities will be monitored for excessive dust generation. Dust control measures (eg. use of water carts) will be implemented if excessive dust generation occurs.

3.3 Flora and Fauna

3.3.1 Existing Environment

Patrick O'Connor, Natural Resource Management Consultant, undertook a flora and fauna assessment of the proposed alignment on 31st July 2001. Vegetation and habitat along the length of the proposed alignment was inspected, assuming a right-of-way of 25m for pipeline installation.

¹ Defined watercourses are those marked and named on the State Government 1: 50,000 map series.

Plant species recorded on or near the pipeline easement are listed in Table 3.

Flora

Most of the native vegetation and native grasslands in the region have been cleared. Most roadsides in the surrounding area are degraded and weed infested, with little or no remnant native vegetation. Degraded *Stipa* spp. grasslands occurs approximately 1km from the site, upon the slopes and crests of surrounding hills.

The proposed pipeline route primarily passes through open cropped paddocks. Aside from crops and sown pasture, vegetation is of low quality and restricted to a less than 50cm strip adjacent to the paddock fenceline (Plate 2). Vegetation present consists of exotic grassland, and is dominated by *Holcus lanatus* (Yorkshire Fog-grass).

The proposed alignment crosses Booborowie Road. The verge of this road has also been heavily disturbed and is dominated by introduced species. There was no native vegetation present in this area or near the proposed alignment.

Plant species present along the proposed Hallett Lateral pipeline route are outlined in Table 3.

Table 3: Plant species present along the proposed Hallett Lateral Route

Plant Species	Common Name
* <i>Acetosella vulgaris</i>	Sorrel
* <i>Arctotheca calendula</i>	Cape Weed
* <i>Echium plantagineum</i>	Salvation Jane
* <i>Holcus lanatus</i>	Yorkshire Fog
* <i>Lepidium africanum</i>	Common Peppercross
* <i>Malva nicaeensis</i>	Mallow of Nice
* <i>Onopordum</i> sp.	Thistle
* <i>Plantago lanceolata</i> var. <i>lanceolata</i>	Ribwort
* <i>Trifolium</i> sp.	Clover
* <i>Verbascum virgatum</i>	Twiggy Mullein

*Denotes alien species

Fauna

Fauna assessment was predominantly based on literature review with additional ground truthing conducted during the site inspection.

No birds or animals were observed during a site visit on 31st July 2001. The small amount of degraded vegetation remaining at the site is unlikely to represent significant habitat for native species. Common agricultural bird species (eg. crows) and stock were the only fauna species observed on or near the proposed alignment during the site inspection.

This site is within the area where populations of the endangered Pygmy bluetongue lizard (*Tiliqua adelaidensis*) occur. The Pygmy bluetongue lizard occurs in tussock grasslands dominated by Irongrasses (*Lomandra multiflora dura* and/or *L. effusa*) along with Spear grasses (*Austrostipa* spp.) and Wallaby grasses (*Danthonia* spp.). At most sites where the Pygmy bluetongue lizard occurs the number of weedy species is similar to the number of native plant species, primarily due to past grazing regimes (Milne 1999). It is unlikely that the Hallett Lateral Pipeline route would constitute habitat for the Pygmy bluetongue lizard given the absence of native grasses in cropped areas and in the adjacent road reserve.

3.3.2 Potential Impacts

Flora

Clearing of the construction right-of-way and indirect damage to vegetation by vehicles and equipment is unlikely to impact on any native species along the proposed alignment.

The overall impact of clearing the right-of-way is not considered significant as existing vegetation is highly disturbed with a high proportion of weed species and no remnant species. The proposed alignment does not require clearing of any remnant trees or shrubs.

Weeds are common along the proposed alignment. There is presently no sign of disease. There is the potential for introduction or spread of weeds and/or disease associated with movement of vehicles and machinery. Disturbance after construction may lead to infestation of the right-of-way by the weed *Onopordum* sp. (thistle).

Fauna

Potential impacts to fauna include:

- Mortality due to entrapment in the open trench; and
- Short-term disturbance associated with noise and human activity.

Given the short time that the trench will remain open and the lack of abundance of animals in the area, impacts to fauna are not considered significant. Introduced species, like house mice (*Mus musculus*) and possibly brown snakes (*Pseudonaja textilis*) are the only animals likely to be affected.

3.3.3 Mitigation Measures

Flora

The following mitigation measures shall be implemented to minimise impacts on vegetation:

- Vegetation along the edge of the pipeline route shall be slashed rather than cleared where practicable;
- Vehicles and machinery shall be washed prior to entering the easement. Cleaning procedures shall ensure that machinery and vehicles are free of soil and vegetation before and after entering the project area, to prevent the

- introduction of weeds and disease. Actions and procedures will be recorded in a vehicle washdown register;
- *Onopordum* sp. (thistle) rosettes shall be grubbed out before seed-heads form, or sprayed using Glyphosphate (dilute to 2.4g/L);
 - Topsoil shall be stockpiled separately from subsoils and respread promptly after backfilling; and
 - Cleared or trimmed vegetation shall be stockpiled separately and respread promptly after backfilling.

Fauna

Impacts to fauna shall be minimised through the following mitigation measures:

- The period of time that the trench is left open shall be minimised;
- Open trenches shall be checked daily for trapped fauna; and
- Ramping and branches shall be placed in the trench to provide a means of escape from the trench.

3.4 Cultural Heritage

3.4.1 Existing Environment

Vivienne Wood, a qualified archaeological consultant, undertook an assessment of European and Aboriginal cultural heritage values of the project area, on 3rd August 2001.

The proposed pipeline route was subject to a pedestrian survey and ground surface visibility was 100%. Representatives of the Nadjuri Walpa Juri Lands and Heritage Association participated in the field survey on 3rd August 2001. An additional site visit was undertaken by Aboriginal group representatives in October 2001 in order to inspect a minor realignment of the route from the road reserve, that runs between Booborowie Road and the proposed Hallett Meter Station, to adjacent agricultural land (Plate 2).

No European or Aboriginal archaeological sites or cultural material were found during the survey. The level of disturbance brought about through a long history of agricultural and pastoral land-use is likely to have had a dramatic effect upon the preservation of any materials that might have been located along the proposed pipeline route.

In addition to consultation with relevant Aboriginal organisations the Register of Aboriginal Sites and Objects, held at DOSAA, was consulted to ascertain whether there are any registered sites in the study area. No previously recorded and/or registered Aboriginal sites are registered in the vicinity of the proposed alignment.

No sites of European cultural heritage value were identified along the proposed pipeline route. A search of the State Heritage Register and the Register of the National Estate did not identify any European cultural heritage sites within the project area.

Records maintained by the South Australian Museum pertaining to skeletal remains and cultural material held in the Museum were also examined. There are no

records of cultural material in the area, however there is reference to two burials being retrieved from the general Hallett area. These burials are housed in the Museum, however their detailed locations were not available.

3.4.2 Potential Impacts

Given that no European heritage or Aboriginal archaeological sites were found during the survey, there is no foreseeable impact to known European heritage or Aboriginal sites and therefore there can be no archaeological constraints on construction activities. However, given that there have been Aboriginal burials found in the Hallett region, it is possible that further such sites could be present in the study area.

3.4.3 Mitigation Measures

All Aboriginal archaeological sites, objects and remains in South Australia are protected by provisions of the *Aboriginal Heritage Act 1988*, which makes it an offence to collect, damage or destroy such sites, objects or remains without the written authorisation of the Minister for State Aboriginal Affairs and approval of the relevant Aboriginal community. In the event of cultural material being uncovered during the construction phase of the project, work must cease and officers of the Department of State Aboriginal Affairs (DOSSA) and the Nadjuri group shall be contacted to determine what action should be taken. These procedures are outlined in Epic Energy's Cultural Management Plan.

Due to the unknown location of previous burial sites in the Hallett area, the following mitigation measure will be employed:

- Nadjuri group representatives will be employed to monitor the excavation of the area at the junction of the Hallett Lateral pipeline and Moomba-Adelaide pipeline, which runs adjacent to the Boobowrie Road.

3.5 Noise

3.5.1 Existing Environment

Background noise levels along the pipeline route are moderate. Background noise levels are typically low in rural areas.

3.5.2 Potential Impacts

Noise emissions during construction are likely to result from the operation of equipment such as excavators, graders, bulldozers and boring equipment.

The project area is not densely settled, with the closest residence kilometres from the pipeline easement. As per relevant EPA guidelines, construction shall occur between 7.00am and 6.00pm, Monday to Saturday and between 9.00am and 6.00pm on Sunday (EPA Information Sheet IS No. 7 September 1999).

There is no noise associated with normal operation of the gas pipeline.

3.5.3 Impact Mitigation

Noise impacts shall be mitigated through the following measures:

- Under normal operating conditions, construction will be scheduled in accordance with EPA recommendations (EPA Information Sheet IS No. 7 September 1999); and
- All vehicles and equipment shall conform to appropriate noise control standards.

3.6 Air Quality

3.6.1 Existing Environment

Air quality in the project area is expected to be good. The surrounding environment is predominantly rural, and there are few emission sources in the project area. Vehicle emissions are considered to be the only significant source of pollutants.

3.6.2 Potential Impacts

Minor emission pollutants such as nitrous oxides, sulphur oxides and carbon monoxide are associated with the exhausts of machinery and support vehicles. Construction phase emission impacts are expected to be minimal due to the short-term nature of the project. The impact of air quality and Greenhouse gas emissions will be insignificant.

Dust resulting from construction and restoration activities on the right-of-way is the most likely air quality hazard. Dust generation is expected to be localised and restricted to construction and restoration phases of the project. Construction is expected to take up to 14 days, and planned for late October. Impacts are expected to be minor.

The planned release of gas from pipelines (including the flaring of purged gas) will be minimised for economic, environmental and greenhouse gas emission reasons. Pipeline venting is expected to occur in association with pipeline commissioning and may occur if required as part of maintenance activities during operations. The impacts on air quality and Greenhouse gas emissions will be insignificant.

3.6.3 Impact Mitigation

General management strategies for the minimisation of air quality impacts include:

- Regular maintenance and servicing of machinery and vehicles, to limit the amount of emissions and potential leaks;
- Minimisation of the period between clearing and restoration, to mitigate dust production;
- Limiting of vehicle speeds, to mitigate dust production;
- Watering of right-of-way sections, as required, to minimise dust production;
- Where practical, planned gas releases (including the flaring of purged gas) shall be conducted under favourable meteorological conditions that will facilitate rapid atmospheric dispersion of the gas;

- **Adjacent landowners will be advised of any pending major venting operations prior to undertaking the activity; and**
- **Venting will be kept to the shortest practical time to minimise the amounts of Greenhouse gas released to the atmosphere.**

3.7 Land Use

3.7.1 Existing Environment

Dryland agriculture is the dominant landuse within the project area and consists mainly of broadacre farming and grazing. The majority of the pipeline alignment traverses an agricultural property immediately north of the road reserve that runs between Booborowie Road and the proposed Hallett Meter Station (Plate 1). This agricultural land is primarily used for cropping and some sheep grazing.

Land parcels in the project area are medium to large and as a result the population density is moderate to low.

There are no noted areas of conservation significance within the project area, with the closest conservation reserve, proclaimed under the *National Parks and Wildlife Act 1972*, being the Mokota Grasslands Park over 10km away.

3.7.2 Potential Impacts

The Hallett Lateral Pipeline project is small in scale and impacts to landuse are expected to be minor. Localised impacts can be summarised as:

- **Short-term reduction in cropping land;**
- **Temporary replacement of permanent fences with access gates;**
- **Short-term disturbance to sheep associated with noise and human activity;**
- **Injury to, or mortality of, sheep in the open trench; and**
- **Risk of fire associated with welding and the use of vehicles and machinery adjacent to paddocks.**

3.7.3 Impact Mitigation

Standard pipeline construction methods minimise the impact of construction on landuse by restricting construction activity to a defined right-of-way.

Appropriate mitigation measures include:

- **Disturbance to crops shall be restricted to the 25m right-of-way;**
- **Access shall be restricted to that which is essential for pipeline construction and operation;**
- **All vehicles shall carry fire extinguishers and the requirements of the Country Fires Act 1989 shall be met;**
- **The pipeline shall be buried to a depth of 1200mm, thereby allowing revegetation following completion of pipeline construction;**
- **All fences shall be reinstated following rehabilitation of the easement; and**
- **Landholders shall be compensated by Epic Energy for any loss of production associated with the project.**

3.8 Public Risk and Safety

3.8.1 Existing Environment

The project area is classified as "General Farming" GF with residences located significant distances apart. The main transport corridor in the project area is the Hallett to Jamestown Road, approximately 4.5km north and the Booborowie Road, crossed by the pipeline.

3.8.2 Potential Impacts

The potential impacts to public safety are dust, fire, explosion or radiation exposure as a result of construction activities or pipeline rupture.

The main potential causes of damage or pipeline failure are considered to be:

- Heavy vehicle traffic;
- Corrosion of the pipeline (external or internal);
- Natural events which stress the pipeline (eg. earthquake);
- Excavation in easement by third parties;
- Overpressure; and/or
- Metallurgical or construction faults.

The main impacts and risks associated with construction activities are:

- Dust generation, which may pose a risk to road users; and
- Injury to third parties.

3.8.3 Mitigation Measures

Mitigation strategies include:

- Installation of appropriate signage, in accordance with project traffic management plans, during construction and operation to clearly identify the presence of construction vehicles and the pipeline;
- The design installation and commissioning process shall be in accordance with relevant codes, in particular AS 2885.1-1997, and ANSI B31.3 where applicable;
- Appropriate safety measures shall be undertaken where construction activities occur adjacent to or across roads;
- The pipeline line will be pressure tested prior to commissioning to ensure integrity of pipes and welds;
- A comprehensive corrosion prevention program shall be implemented;
- All welded joints shall be subject to x-ray inspection during construction to ensure integrity of welds;
- Regular liaison shall be conducted with landholders and local residents to inform them of the schedule of construction works;
- Monitoring of the pipeline from Epic Energy's Gas Control Centre in Perth and by locally based field inspectors;
- Minimisation of the period between clearing and restoration to mitigate dust production;
- Limiting of vehicle speeds to mitigate dust production; and

- **Watering of right-of-way as required, to minimise dust production.**

3.9 Additional Mitigation Strategies

3.9.1 Environmental Management Plan

A task-specific EMP shall be developed and implemented during construction of the proposed pipeline.

3.9.2 Awareness Program

Epic Energy shall ensure that all personnel are adequately aware of the relevant impact mitigation strategies.

3.9.3 Job Environmental Analysis

Epic Energy will subject construction activities to Job Environmental Analysis².

3.9.4 Contractual Obligations

All contracts with companies undertaking construction activities for Epic Energy on the Hallett Lateral Pipeline project shall include a requirement to:

- **Operate in a manner consistent with Epic Energy's Environmental Policy;**
- **To adopt mitigation strategies outlined in this EIR;**
- **To operate in compliance with the project specific EMP; and**
- **Meet SEO commitments.**

3.9.5 Reporting

Any complaints from adjacent landowners that arise as a direct result of construction activities shall be recorded by the Lands Officer and reported to the Epic Energy Lands and Environmental Manager.

² Job Environmental Analysis is a system used by Epic Energy to ensure all potential hazards and consequences are identified and mitigation measures (including implementation strategies) are identified and recorded by field staff.

4 Consultation

During the preliminary survey, planning and design phases of the project Epic Energy initiated consultation with stakeholders that will be directly impacted by the construction and operation of the Hallett Lateral Pipeline. The following sections summarise consultation undertaken with State and Local Government, utility providers, landowners and Aboriginal organisations.

4.1 State and Local Government

Epic Energy has consulted with representatives from the following State and Local Government Departments and Agencies:

- Goyder Regional Council;
- Transport SA; and
- Department of State Aboriginal Affairs (DOSAA).

Goyder Regional Council is responsible for the adjacent road reserve and has been informed of the proposed pipeline project. No issues of concern have been raised by State and Local Government stakeholders.

4.2 Private Landowners

The proposed pipeline traverses one private property (owned and managed by DJ and GV Thomas). The landholder has been informed of the proposed pipeline project and negotiations for easement acquisition are complete.

4.3 Aboriginal Organisations

The study area lies within the boundaries of the Nadjuri Walpa Juri Land and Heritage Association (Peppermint Gum People). Vincent Copley and Vincent Branson were contacted about the project and representatives invited to participate in the field survey. Vincent Copley, Vincent Branson, Fred Warrior and Sherilee Kartinyeri participated in the field survey on 3rd August 2001. Survey findings and proposed recommendations were discussed with the field group at its completion and copies of the report have been provided to them for their information.

An additional site visit was undertaken by the above representatives in October 2001 in order to inspect a minor realignment of the route from the road reserve, that runs between Booborowie Road and the proposed Hallett Meter Station, to adjacent agricultural land (Plate 2).

5 Conclusion

The Hallett Lateral Pipeline is a small project involving construction of infrastructure in a highly modified environment of low population density. The potential impacts to landholders, the environment and stakeholders are expected to be short-term and minor in extent. No significant long-term adverse impacts are expected. Nevertheless, the following key issues requiring attention during construction and operation of the proposed pipeline have been identified:

- Prevention of soil erosion and compaction;
- Maintenance of agricultural infrastructure;
- Prevention of weed and disease introduction and establishment;
- Minimisation of impacts on cultural heritage sites; and
- Safeguarding of public safety.

In managing potential impacts Epic Energy is committed to working closely with all relevant authorities and landholders. Compliance with the EMP shall be audited, and ongoing monitoring and maintenance programs shall be implemented. Epic Energy shall take all necessary steps to rehabilitate areas affected by the project during both construction and operation.

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Environment Protection Agency. (September 1999). EPA Information Sheet IS No. 7: Construction Noise. South Australian Environment Protection Agency.

Milne, T. (1999) Conservation and Ecology of the Endangered Pygmy Bluetongue Lizard (*Tiliqua adelaidensis*), unpublished PhD Thesis, Flinders University.

Abbreviations

Ecoss	Ecoss Consulting (Aust) Pty Ltd
EIR	Environmental Impact Report prepared in accordance with Section 97 of the <i>Petroleum Act 2000</i> and Regulation 10.
EMP	Environmental Management Plan
EMS	Environmental Management System
DEH	Department for Environment and Heritage
DOSSA	Department of State Aboriginal Affairs
ETSA	Electricity Trust of South Australia
JEA	Job Environmental Analysis
km	Kilometre
mm	Millimetre
PIRSA	Primary Industries and Resources, South Australia
PSL	Preliminary Survey Licence issued in accordance with Section 10 of the <i>Petroleum Act 2000</i> .
SEO	Statement of Environmental Objectives prepared in accordance with Section 99 and 100 of the <i>Petroleum Act 2000</i> and Regulations 12 and 13.

Appendix A

Environmental Policy

ENVIRONMENTAL POLICY



The environment is one of our most important values

Our company's success and standing in the community depends on our commitment to the protection of the environment in which we work, and complying with relevant laws.

Our goal, whether it is in the performance of routine maintenance or construction of new facilities is to complete our work without environmental non-conformance.

The maintenance of the environment is the responsibility of each and every one of us. We will work to continually assess and improve our practices.

We will ensure free and open communication on environmental issues.

On behalf of all our stakeholders, I have committed Epic Energy to achieve and sustain environmental excellence using appropriate internal and/or external resources.

Epic Energy Operates in an Environmentally Friendly Manner

Sue Ortenstone

Chief Executive Officer
May 2001

Appendix B

Plates

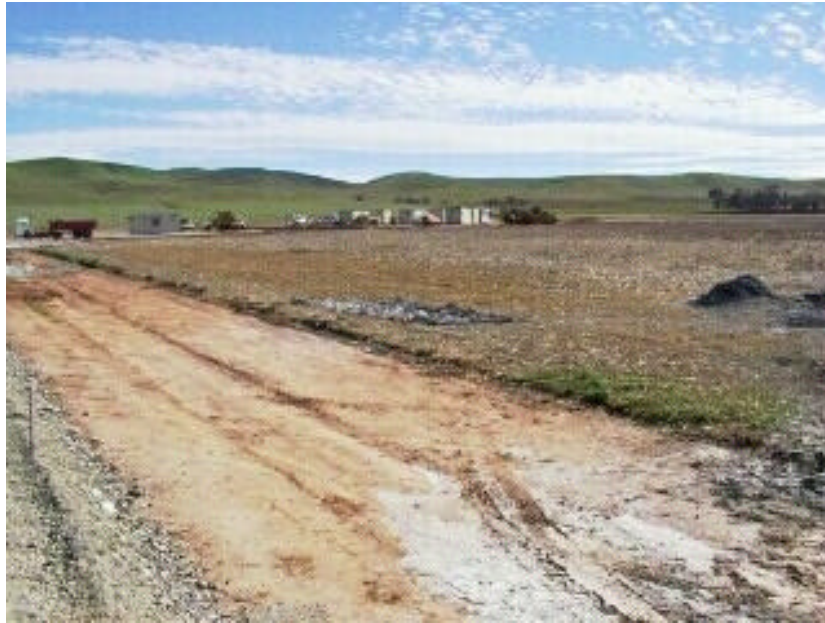


Plate 1: Proposed AGL Peak Load Power Station Site



Plate 2: Pipeline easement (right of fenceline) and adjacent road reserve.