



epic*energy*

2003 ANNUAL REPORT

On

Pipeline Licence 3 & 4

SOUTH EAST PIPELINE SYSTEM

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LIST OF ABBREVIATIONS

AS2885	Australian Standard 2885 Pipelines - Gas and Liquid Petroleum
AVT	Accuracy Verification Test
CFS	Country Fire Service
CP	Cathodic Protection
CPU	Cathodic Protection Unit
DCGV	Direct Current Voltage Gradient
DNV	Det Norske Veritas
EMS	Environmental Management System
ESD	Emergency Shut Down
GPS	Geographical Positioning System
HELM	Heritage, Environment and Land Management
HSE	Health, Safety and Environment
LMS	Land Management System
MFS	Metropolitan Fire Service
MLV	Mainline Valve
PIRSA	Primary Industries and Resources of South Australia
PL3&4	Pipeline Licences 3 and 4
POMS	Pipeline Operating Management System
ROW	Right of Way
SCADA	Supervisory Control and Data Acquisition
SEO	Statement of Environmental Objectives
SEP	South East Pipeline
SES	State Emergency Service
SMS	Safety Management System
TJ	Terra Joule

1.0 PURPOSE

This report is submitted in accordance with the requirements of Pipeline Licence 3, Pipeline Licence 4 and the SA Petroleum Regulations 2000.

2.0 SCOPE

The South East Pipeline system is owned, operated and maintained by Epic Energy.

This report reviews operations carried out during 2003 and intended operations for 2004 to 2006. In accordance with the Petroleum Regulations, a performance assessment is also provided with regard to the Statement of Environmental Objectives for the South East Pipeline.

The design parameters for the SEP are as follows:

Katnook – Kimberley Clarke Pipeline [Pipeline Licence 4]

Date Constructed	1990 – 1991
Date Commissioned	March 1991
Length, km	46.1 Kilometres
Diameter (OD), mm	168.3 mm
Wall Thickness, mm:	
- Normal	4.2 mm
- Special Crossings (eg: rivers, roads, railways)	5.00 mm
- MLV's	
Pipe Grade	API 5LX 42
MAOP, kPa	10,000 kPa
Coating	Yellow Jacket
Main Line Valves	3
Actuators	Manual
Compressor Stations	Nil
Meter Stations	Kimberley Clarke

The Kimberley Clarke pipeline runs from the Epic Energy site, adjacent to the Katnook production plant, to a meter station near Tantanoola. The cathodic protection system is sacrificial anodes and the pipeline was constructed with Zaplock joints. The pipeline has pig trap facilities at Katnook and Kimberley Clarke and a MLV midway along the pipeline at Glencoe.

Glencoe – Mount Gambier Lateral [Pipeline Licence 4]

Date Constructed	1990-1991
Date Commissioned	April 1991
Length, km	18.9 Kilometres
Diameter (OD), mm	168.3 mm
Wall Thickness, mm:	
- Normal	4.2 mm
- Special Crossings (eg: rivers, roads, railways)	5.00 mm
- MLV's	
Pipe Grade	API 5LX 42
MAOP, kPa	10,000 kPa
Coating	Yellow Jacket
Main Line Valves	2
Actuators	Manual
Compressor Stations	Nil
Meter Stations	Mount Gambier

The Mount Gambier Lateral runs from Glencoe, midway along the Katnook to Kimberley Clarke Pipeline, to a meter station on Nick Lyon Road, Mount Gambier. The cathodic protection system consists of sacrificial anodes and the pipeline was constructed with Zaplock joints. The pipeline has pig trap facilities at Glencoe and the Mount Gambier meter station.

Nangwarry Lateral [Pipeline Licence 4]

Date Constructed	2001
Date Commissioned	August 2001
Length, km	11.5 Kilometres
Diameter (OD), mm	88.9 mm
Wall Thickness, mm:	
- Normal	3.2 mm
- Special Crossings (eg: rivers, roads, railways)	4.00 mm
- MLV's	
Pipe Grade	API 5LX 56
MAOP, kPa	9850 kPa
Coating	Yellow Jacket
Main Line Valves	Upstream & downstream isolation valves
Actuators	Manual
Compressor Stations	Nil
Meter Stations	Nangwarry

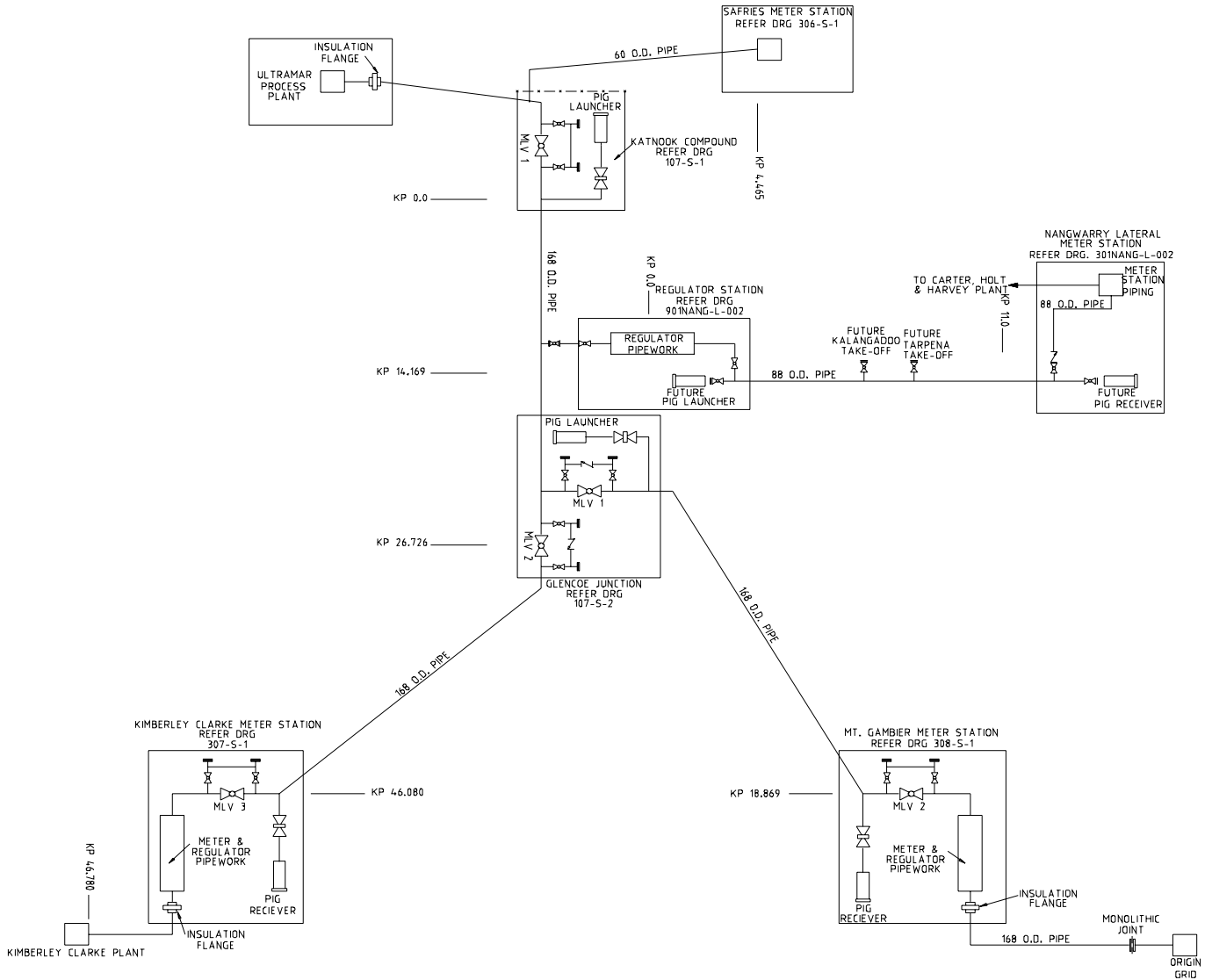
The Nangwarry Lateral runs for 11.5 kilometres from a take off on the 150mm Katnook to Kimberley Clarke pipeline near Kalangadoo, to a meter station at Nangwarry. The lateral is protected with sacrificial anodes, is buried at a minimum depth of 1000mm and 1200mm at crossings and has welded joints. The pressure in the lateral is reduced to 2000kPa at a regulator off take station near Kalangadoo.

Safries Lateral [Pipeline Licence 3]

Date Constructed	1990
Date Commissioned	January 1991
Length, km	4.5 Kilometres
Diameter (OD), mm	60.3
Wall Thickness, mm:	
- Normal	3.9 mm
- Special Crossings (eg: rivers, roads, railways)	3.9 mm
- MLV's	
Pipe Grade	ASTM A106 Gr B
MAOP, kPa	10,000 kPa
Coating	Yellow Jacket
Main Line Valves	Upstream and downstream isolation valves
Actuators	Manual
Compressor Stations	Nil
Meter Stations	Safries

The Safries Lateral runs for 4.5 kilometres from the Epic Energy Katnook site, adjacent to the Katnook production plant, to a meter station in the Safries Pty Ltd property, situated on the Penola to Mount Gambier Road. The pipeline cathodic protection system is sacrificial anodes and the pipeline has welded joints.

2.1 Pipeline Route and Facilities Schematic



PIPELINE ROUTE AND FACILITIES DIAGRAM

3.0 PIPELINE INTEGRITY MANAGEMENT

3.1 Pipeline Inspections and Assessment



- All routine road patrols and above ground facility inspections were completed as scheduled, in accordance with AS2885 and pipeline licence requirements. Additional patrols are carried out by Dry Creek based Field Maintenance Officers, in conjunction with scheduled maintenance visits to the area. Issues identified as part of the patrols, relate to signage replacements and fencing encroachments.
- Pressure vessel inspections, both internal and external, were carried out by a certified contractor, in accordance with AS3788. Written reports were provided for all inspections. There were no significant issues highlighted as a result of the inspections.

Routine fire extinguisher inspection and maintenance was completed, in accordance with Australian Standards, by a licensed contractor for the South East Pipeline system.

In conjunction with the painting programs at Kimberley Clarke and Mt. Gambier meter stations, all station pipe support clamps were removed and inspections conducted. The inspections did not reveal any defects or integrity issues as a result of corrosion. All pipework was recoated, "Rockguard" was installed to eliminate any future possible source of corrosion and the pipe support clamps were re-fitted.

3.1.1 Leakage Surveys & Detection

There were no dedicated "Leak Detection Surveys" carried out on the South East Pipeline system during 2003, however routine patrols, site inspections and regular maintenance visits by field maintenance staff contribute to pipeline leak detection.

Monitoring of station flows, operating pressures and temperatures and valves statuses via TSCC, also contributes to pipeline facility integrity.

There were no reported, uncontrolled gas leaks for the South East Pipeline system during 2003.

3.1.2 Pipeline Wall Defect Assessment

A Pipe Wall Defect Survey was not carried out during 2003. As detailed later within this report, an “Intelligent Pigging” program is budgeted and scheduled for completion during 2004.

3.2 Stress Corrosion Cracking Investigations

3.2.1 External Surfaces

No investigations into “Stress Corrosion Cracking” (SCC) were undertaken on the South East Pipeline system during 2003. The SEP is a free flowing pipeline, with a MAOP of 10,000kPa and 9,850kPa for the Nangwarry Lateral. Pipeline operating pressures are consistently within the range of 4,000–6,500kPa, with the Nangwarry Lateral operating at 2,000 kPa as a result of the pressure reduction station installed near the Kalangadoo takeoff.

Due to the stable nature of the system, the pipeline operating temperatures are constant. As part of Epic Energy’s “Search for SCC” program, all defects exposed for inspection in 2004 will be checked for stress corrosion cracking.

3.3 Verification of Intelligent Pig Features:

Defect verification assessments were not undertaken on the South East Pipeline system during 2003. An “Intelligent Pigging” program has been scheduled and budgeted for completion in August 2004, in accordance with Epic Energy’s pipeline integrity plan and meeting the requirements as stated in AS2885.

3.4 Coatings

Kimberley Clarke and Mt. Gambier Meter Stations underwent a full re-coat of all above ground facilities. This was completed during April 2003. This task consisted of blasting all of the station pipework and where required, the design, installation and testing of station bypass pipework, to ensure the coatings were applied as per manufacturer’s recommendations. The coating system applied on all above ground pipework was a three coat, two part pack epoxy paint system.

Gippsland Cathodic Protection Services conducted a DCVG survey on the South East Pipeline system during June 2003. The survey identified 3 defects on the Glencoe to Mt. Gambier Lateral and 3 defects on the Katnook to Kimberley Clarke section. The approval process from property owners, councils and other utilities relating to the excavations, is to be undertaken in February 2004, with excavation and inspection of the defects scheduled for April 2004. During this period, an inspection of a “Zaplock” joint, “Canusa” shrink sleeve and a test between the compatibility of a “Plidco” split sleeve and “Zaplock” field joint will also be conducted.

A copy of the DCVG report is attached at Annex C.

3.5 Pipeline Cathodic Protection

To mitigate corrosion, the South East Pipeline is coated with a protective, extruded butyl mastic and polyethylene coating system, which serves to isolate the external pipeline surfaces from corrosive elements in the surrounding environment. Field joints are coated with a polyethylene backed, butyl mastic tape system. Secondary protection at coating holidays and imperfections is achieved by applying cathodic protection.

The cathodic protection system of the South East Pipeline is of a sacrificial type and consists of magnesium anodes on the Kimberley Clarke, Mt. Gambier and Safries Laterals. The Nangwary Lateral consists of zinc anodes.



Lightening Protection Nangwarry

Performance

The effectiveness of the cathodic protection system is monitored by carrying out two full line potential surveys annually. The protection levels are assessed according to the criteria set by AS2832.1-1998.

Potential profiles of the SEP, taken in March 2003, together with the last survey in October 2003, are given in Annex B. These profiles show that:

Kimberley Clarke Pipeline

The potential profiles of this pipeline indicate that it is fully protected along its entire length. The laterals total protective current demand was 22.40mA, which is equivalent to approximately 1 micro A/M2 - a low current demand indicating a good pipeline coating system.

Mt Gambier Lateral

The potential profiles of this lateral indicate that the pipeline was fully protected and polarised to the cathodic protection criteria on its entire length. The protective current demand for the lateral was 19.8mA, which is equivalent to 1.9 micro A/M2. This indicates that the pipeline coating is in good condition.

Safries Lateral

The potential profiles of this lateral indicate that the pipeline is fully protected and polarised to the cathodic protection criteria on its entire length. The protective current demand for the lateral was 3.5mA, which is equivalent to 4.5 micro A/M2. The last survey reports indicated a high current demand that was probably due to a short to the copper pipes down stream of the metering station.

Nangwarry Lateral

The potential profiles of this lateral indicate that the pipeline was fully protected and polarised to the cathodic protection criteria on its entire length. The protective current

demand for the lateral was 11.3mA, which is equivalent to 2.03 micro A/M2. This indicates that the pipeline coating is in good condition.

Internal Corrosion/Impurities

As the gas in the South East Pipeline system is free from corrosive species, internal corrosion is not a significant issue on this system. Routine mercury sampling is carried out within the gas streams and on liquids contained within coalescing filter vessels. Results obtained from analysis are consistently below recommended exposure limits, however, a safe work procedure has been implemented requiring the use of specific personal protective equipment (PPE) when any personnel are carrying out maintenance tasks which may involve exposure. An “Intelligent Pigging” program has been scheduled for completion during 2004, as part of Epic Energy’s pipeline integrity inspection program.

Coating Condition

The condition of the pipeline coating is monitored by five-yearly DCVG surveys on the pipeline. The last survey was conducted in June 2003. There were 3 defects located on the Glencoe to Mt. Gambier Lateral with 3 defects also identified on the Katnook to Kimberley Clarke section. No defects were located on the Safries or Nangwarry Laterals. Section 5.1.2 summarizes the defects scheduled for excavation and evaluation. A copy of the DCVG Survey from June 2003 is attached to this report in Annex C. The report summarizes defect location, nature of the defect and possible causes.

DCVG Surveys and Pipeline Excavations

A defect, identified as part of the DCVG survey, has been identified for excavation on the Glencoe to Mt. Gambier Lateral. All other locations, as detailed in the report attached in Annex C, have been confirmed as pipeline anchor blocks. The defect will be excavated in March 2004 and assessment of this defect will determine any further requirements.

The defect detail is outlined below;

Latitude	Longitude	% IR Drop	Remarks
Glencoe Junction – Mt Gambier			
-37.722296	140.725925	24	Wandillo Rd.

Conclusion on Pipeline Condition

Pipeline Coating Condition

The low protective current density of the laterals indicates that their coating system is in good condition. Higher than average current demand on the Safries Lateral encountered in the last survey will be investigated.

Significant defects in the 2003 DCVG survey will be excavated for inspection early in 2004.

Cathodic Protection System

Monitoring cathodic protection parameters, including the potential profiles of the South East Pipeline System, has indicated that the cathodic protection system is providing the system with adequate protective currents to polarise them to the criteria

levels, as set by Australian Standards and Epic Energy's maintenance requirements. CP Potential profiles are included in this report in Annex 1.

Pipeline Integrity

An ongoing history of low current demand and polarised potential levels on the South East Pipeline System, indicate that the pipeline is in good condition, free of corrosion and is capable of operating at set parameters with no restrictions.

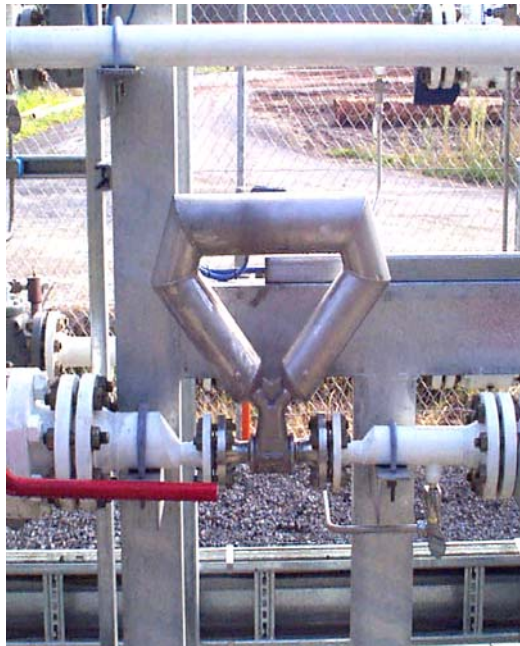
Epic Energy's Senior Cathodic Protection Engineer carried out an audit of the cathodic protection systems on the South East Pipeline System during November 2003. An investigation was carried out to check the functionality of the sacrificial cathodic protection sites, in providing current to the pipeline in areas with a high water table and effects of AC voltages on the anode system.

It was found that the anodes were providing satisfactory levels of protection to the pipelines and also mitigated operational induced voltages from overhead power lines. An AC mitigation study is currently being undertaken on the pipeline to investigate the capability of the anodes to mitigate AC voltages during fault current conditions.

3.5.1 Pipeline Potential Profiles

Annex C, attached at the end of this report, contains Pipeline Potential trends, which have been collated during the Full Line Surveys, conducted during the March and October 2003. The trends show that the pipeline system is fully protected as previously stated.

3.6 Electrical and Instrumentation



Coriolis Meter

- Accuracy Verification Testing was completed in accordance with customer agreements, on a three monthly basis at all meter stations on the South East Pipeline System. Customer representatives attended AVT's at several locations throughout 2003.
- All AVT results are documented and filed within the Central Filing System. All reports, summaries of activities and calibration certificates are forwarded to Origin Energy.

Electrical compliance testing was carried out on all portable electrical equipment and residual current devices (RCD's) at all sites, in accordance with AS3760 and the OHS&W Act 1995.

A 2003 capital project “Replacement of Antiquated Equipment”, significantly raised the standard of the South East Pipeline facilities and was completed at Mt Gambier, Kimberly Clarke and Safries meter stations during March 2003. This involved upgrading of cable support systems, electrical junction boxes, station pressure transmitters, level switches/auto dump systems and ensuring that cable terminations comply with hazardous area requirements.

Routine 6 monthly maintenance tasks involved the inspection, testing and calibration of all non-billing transmitters station battery systems and associated station instrumentation.

No major electrical/instrumentation related failures were reported during 2003. Examples of minor corrective instrumentation/electrical maintenance tasks carried out at the facilities consisted of a pressure and flow switch replacement, investigation into random communication faults, a temperature transmitter replacement and a turbine meter signal fault.

3.6.1 Signage

Signage on the South East Pipeline system is maintained in accordance with the requirements, as stated in AS2885.

Pipeline and compound signage is addressed as part of the routine patrols carried out by the South East Contractors. Additional signage audit checks are carried out by Epic Energy’s Field Maintenance Officers on a regular basis, in conjunction with scheduled maintenance visits.

As a result, approximately 200 pipeline warning signs and 40 sign posts were replaced throughout the year to maintain good line of sight.



3.6.2 Pressure Control and Protective Equipment

Routine inspection and maintenance was carried out on the pressure regulation/pressure relief systems at all South East Meter Stations on a 6 monthly basis during 2003.

Maintenance tasks for the pressure control systems consisted of the inspection/overhaul of regulator seats, pilots and instrumentation filters and tooling to ensure correct operation of set points of the active/monitor and bypass regulation systems.

Pressure Safety Valves are also checked in conjunction to confirm correct set point, operation and alarming functions. Where applicable, overpressure isolation valve functions are tested to ensure satisfactory operation.

All routine 6 monthly maintenance is documented via Epic Energy's computerised asset management system (Maximo) and file copies are located within the central filing system.

As a result of the review and improvement of maintenance plans carried out during 2003, no mechanical failures were reported for the South East facilities during the reporting period.

3.6.3 Site Security

The South East Pipeline system is secured in accordance with Epic Energy's standard policies, in that all critical valves, compounds and control huts are locked with a "common lock" system. All above ground facilities are located within a two-meter high chain mesh fence with three strands of barbwire.

Valve status, station operating parameters and building 'entry' alarms are monitored via the SCADA system.

Routine patrols, site inspections and regular maintenance visits throughout the year, on all facilities on the pipeline system, did not highlight any areas of concern, vandalism or security breaches during 2003.



3.6.4 Structures

All buildings and structures are inspected and maintained as part of routine maintenance procedures are in sound condition. An additional storage shed was installed at the Mt. Gambier meter station during 2003. This shed houses

a dedicated “Emergency Response Trailer” and selected spares, including spare signage, for the South East region.

3.7 Communications

After a few initial faults, the communication upgrade of 2001 to Telstra private IP system giving real-time data, has produced a reliable system, with high communication availability and low maintenance requirements. There were only minor outages encountered in 2003, all relating to faults within the Telstra infrastructure.

3.8 Mechanical



- All routine mechanical maintenance activities were completed as scheduled on the South East Pipeline system during 2003. This work involved MLV servicing, station dust filter inspection/replacement, door closure maintenance, coalescing filter inspection/maintenance and pig launcher/receiver maintenance.
- Two “meter run” isolation valves were replaced at Kimberley Clark and Mt. Gambier meter stations respectively, as the original units had damaged internal seats, providing poor “shut-off” capability.

The stainless steel fitting upgrade project, as mentioned in the 2002 Annual Report, was completed in conjunction with the meter station painting program. This upgrade has greatly improved the integrity of the above ground facilities. As a result of process and environmental conditions, the risks associated with corroded carbon steel fittings, have been eliminated.

No major mechanical failures were reported for the South East Pipeline during 2003. Corrective mechanical maintenance throughout 2003 related to an actuated valve operator repair, a pressure regulator inspection/adjustment and minor corrective tasks identified as part of the station upgrade projects.

3.9 Ancillary Equipment

All station pipe supports, valves and pig trap facilities were inspected and maintained as part of routine maintenance activities carried out during 2003, with no outstanding actions to report.



3.10 Results, Analysis and Remedial Action Taken

Additional ground fill was spread in the South East meter stations to eliminate trip hazards that were identified as part of an internal incident investigation.

A “First Response Emergency Trailer” has been permanently located at the Mt. Gambier meter station, as a result of action items arising from the emergency exercise conducted during 2002.

4.0 THREAT MITIGATION

4.1 Surveillance

Routine road patrols are carried out monthly on the South East Pipeline system by permanent contractors based in the South East region, in accordance with the Pipeline Licences and AS2885.

Additional patrols are also scheduled after heavy rainfalls to check for signs of erosion or other irregularities.

Regular routine maintenance visits by Field Maintenance Officers from Dry Creek, also provides an opportunity for additional patrols and the ability to monitor contractor performance, in relation to patrols, signage and land management issues.

The majority of items identified as part of the routine patrols related to the replacement of signage and the monitoring of third party activities in the vicinity of the pipeline easement.

4.2 Maintenance Programs

The maintenance program outlines the maintenance requirements to ensure the integrity and reliability of the pipeline and associated infrastructure. In 2003, a program was introduced to improve the efficiency and effectiveness of the maintenance team, in executing the maintenance program and focusing on the steps involved with the work flow process. The program involved mapping the work flow process and aligning the roles within the organisation to the process steps.

The resultant process ensures that all the work identified from and as a result of the maintenance program is planned and prioritised more effectively and efficiently.

4.3 Marking

Signage on the South East Pipeline system is installed and maintained in accordance with AS2885.3. Compound signage incorporates “HAZCHEM” identification, facility ownership and contact details in the event of an emergency, via a toll free number. “Line of Sight” checks are carried out as part of routine pipeline patrol activities, with ongoing signage replacements as required.

4.4 External Interference Prevention

4.4.1 Pipeline Location Service

Epic Energy provides a free service to locate pipelines for which they are responsible. The service is primarily used by other companies carrying out civil works in the vicinity of any pipelines administered by Epic Energy.

There were a number of pipe locations carried out for third parties on the South East Pipeline system in 2003. The locations required Epic Energy supervision for third party activity within the pipeline easement, mainly for new and replacement fences and vehicles working within the easement boundaries.

Epic Energy is a founding member of the “SA/NT Dial Before You Dig” organization. Use of the service by contractors helps to improve the protection of the pipeline from unauthorised 3rd party activities.

One incident of unauthorised activity within the easement was recorded in November 2003, when a land owner erected a temporary fence on the easement without permission. The landholder concerned had been visited during all landholder contacts and had received printed pipeline safety brochures at every visit. When asked why he failed to contact Epic Energy before erecting this fence, he stated that he believed only a permanent fixed fence across the easement would require notification. The landholder was corrected on this point and a letter sent to him, outlining the safety and legal consequences of a breach of the conditions of the easement.

4.5 Landholder Contacts

There are five landowners and occupiers along the Safries Pipeline, 75 landowners and occupiers along the South East Pipeline and 12 landowners on the Nangwarry Lateral.

All landholders/occupiers were visited by the Land Management Officer in 2003.

No issues or concerns, relating to access, or the general operation of the pipeline through the relevant properties were raised by landholders.

Contacts are also made by Field Maintenance Officers, the local contractor and Superintendents, during the course of daily business. Any issues that may occasionally arise are recorded in the Land Management System for follow up and review.

Land management is supported by Epic Energy’s dedicated GIS. It provides a powerful database and MapInfo facilities. Notes relating to discussions, all property details, including issues with the property owners, are recorded in the Land Management System (LMS). Through its MapInfo facility, an image of the cadastral boundaries of each property, relative to the pipeline route, can be displayed for any land parcel. Each property owner dwelling has been captured by GPS and will be displayed on the pipeline/cadastral plans.

If personal contact cannot be made, the occupier or owner is contacted by letter or telephone. A letter explaining the reason for the visit, the contact officer’s business card, an information brochure on pipeline safety and our Dial Before You Dig contact phone number is left at all unattended residences visited. All property owners receive

a “landowner pack” containing a Dial Before You Dig information bag, pipeline safety brochure, a complimentary biro, cap, drink holder, as well as the annual pipeline safety awareness calendar, which is individually mailed out or handed personally to the occupier.

A file is maintained for each of the land parcels crossed by pipelines. Each property is flagged with the Land Titles Office. Epic Energy are automatically notified by email of any changes in ownership or land tenure details, ensuring that our records are as up to date as possible for mail outs and personal visits. New owners are sent an Epic Energy Safety Brochure.



4.6 Community Awareness

Epic Energy holds pipeline safety awareness meetings with communities along the pipeline route.

Meetings are generally held on an annual basis. The target audience is contractors, utilities, members of Country Fire Service (CFS), Metropolitan Fire Brigade (MFS), Police, Ambulance, SES and Councils. Community members are also invited to attend.

The focus of the awareness presentation is on Epic Energy’s background, properties of natural gas, how a pipeline operates, emergencies – how to identify hazards and leaks, what to do to prevent hazards occurring and what process to follow (Dial Before you Dig 1100), if you wish to undertake works in the easement. No presentations were made during 2003. To readdress this situation, presentations were given in January 2004 to the Shire Council and the CFS.

5.0 MANAGEMENT

5.1 Risk Assessments

5.1.1 Risk Assessment

As part of the risk assessment process, a hazard and operability [HAZOP] study of all above ground facilities on the South East Pipeline system was carried out in 2001 using an external facilitator. This study was reviewed and determined not to meet Epic Energy's current standard. Consequently, a new HAZOP of all above ground facilities on the system was carried out December 2002.

As a result of the HAZOP's, 128 action items were identified. The actions were grouped into specific categories, such as "common" and "site specific" actions. All of the action items have been accessed and classified as improvements to the facilities and/or systems.

Several of the action items identified have been addressed as part of upgrade projects completed during 2002/2003, with a view to complete the outstanding actions by means of maintenance or project activities during 2004.

A status report, relating to the HAZOP actions, will be forwarded to PIRSA early in 2004.

5.1.2 AS2885 Risk Assessment

No formal AS2885 risk assessments were carried out on the South East Pipeline system during 2003. However, action items identified as part of the process carried out in July 2001 and April 2002, continue to progress and are monitored. An AC Mitigation Survey investigating potential dangers as a result of induced currents has been implemented. The results and recommendations are due in February 2004.

Examples of action items raised from the risk assessment are as follows.

- Inspection of a "Canusa Shrink Sleeve", installed to provide corrosion protection for field joints. Scheduled for completion March 2004.
- An AC Induction Survey to investigate the effects of induced currents as a result of high voltage power lines. Scheduled for completion February 2004.
- The installation of additional signage to comply with AS2885 – this action is complete and being monitored during routine patrols.

5.2 Management Systems

During 2003, management workshops were held between Operational Support Service groups, such as engineering, planning, logistics, transportation services and maintenance with the aim to identify and prioritize issues and further improve the interaction between all groups, in order to ensure that systems and procedures remain effective.

Leadership workshops were also conducted to establish "core values" that were held within Epic Energy.

5.2.1 Reports Generated in 2003

The following reports were generated and forward to PIRSA during 2003:

- PL3/4 Annual Report for 2002, forwarded 12 February 2003
- Fitness For Purpose report for 2003, forwarded 23 December 2003

5.2.2 2004 One-Off Activities

- An Intelligent Pigging Program has been budgeted and scheduled for completion in 2004.
- The implementation of the proposed modifications at the Mount Gambier meter station to automatically switch the bypass regulator run into service in the event of a duty monitor/active regulator fail.
- DCVG survey results – excavation and inspection. This will also include Canusa sleeve/Zaplock joint and confirmation of a “Plidco” split sleeve/”Zaplock” field joint compatibility.
- An AC Induction survey to investigate the effects of induced currents as a result of high voltage power lines. Scheduled for completion February 2004.
- A “Safety and Operating Plan” to be developed for the South East Pipeline system.
- Investigation and reporting into the effects of “low temperature on pipeline materials”. This study is being carried out in conjunction with Worley Engineering.

5.2.3 2005 One-Off Activities

Possible additional works scheduled for 2005 will be as a result of the intelligent pigging integrity program, following data analysis and will involve the excavation/inspection of the pipeline.

The possible upgrade in metering facilities at the Kimberley Clark meter station.

Preliminary works relating to the completion of an AS2885 Risk Assessment, scheduled for completion prior to July 2006, will be undertaken during the later stages of 2005.

5.2.4 2006 One-Off Activities

2006 will see the completion of a pipeline risk assessment, in accordance with AS2885.1 and HB105-1998, prior to July 2006.

5.2.5 Volume of Product Transported

Approximately 2,881 TJ of natural gas was transported through the South East Pipeline in 2003.

5.2.6 Statement of Expenditure

Commercial in Confidence.

5.3 Emergency Response

Pipeline Licence 3 and 4 states that an emergency exercise is conducted on the South East Pipeline System every two years.

Epic Energy satisfies these requirements by conducting a minimum of two emergency exercises annually in South Australia. In order to maintain and further refine our emergency response preparedness, to gain a broader understanding of response requirements, roles and responsibilities within the scenarios are varied.

The last emergency exercise drill carried out on the South East System was in March 2002.

Emergency Response Objectives

To further improve Epic Energy's emergency response preparedness, the escalation of emergency response training exercises to include full mobilisation, the involvement of external parties, permanent contractors and emergency services within the South East Region is being investigated.

This, along with varying roles for Epic Energy staff and permanent contractors during exercises, will further improve our emergency response capabilities and awareness for all people involved.

5.3.1 Emergency Response Incidents

There were no emergency response incidents to report for the South East Pipeline system for 2003.

5.3.2 Emergency Response Exercises

During 2003, emergency exercises were conducted on the Riverland Pipeline – "Operation Murray Bridge" on 7 July 2003. This exercise was co-ordinated from the South Australian Incident Command Centre at Dry Creek and involved the mobilisation of field staff and equipment to site. The report on the exercise was forwarded to Origin Energy in late July 2003. It is Origin Energy's responsibility to forward the report to PIRSA.

The second exercise, "Operation EPIGAS" was conducted on the Peterborough Lateral on 8 November 2003. This exercise involved Epic Energy's South Australian Incident Command Centre, field staff and field mobilisation of emergency services and third parties from the region. The report relating to the exercise was forwarded to PIRSA on 30 December 2003.

A crisis simulation exercise, "Operation Quilpie" was also conducted on 30 October 2003 on the SWQ pipeline. The exercise involved Epic Energy staff nationally, along with 'external' role players. This exercise was managed from the Incident Command Centre at Dry Creek and provided valuable training for all staff involved.



5.4 Incidents and Corrective/Preventative Action

5.4.1 Incidents

A medical treatment injury occurred on 21 March 2003 at the Mount Gambier meter station. The injury occurred when a permanent contractor lost his balance after tripping over a 75mm step on the edge of the concrete pad located under the station pipework. The employee struck his head on nearby pipework. The contractor received treatment for a laceration and observation for concussion. Remedial actions involved the addition of base material to the compounds to eliminate trip hazards at the South East meter stations.

As previously detailed, in Section 4.4.1, an incident of unauthorised activity within the easement was recorded in November 2003, when a landowner erected a temporary fence on the easement without permission.

5.5 Reported Incidents

During 2003, no reports relating to gas venting, low station sales pressures or customer complaints were received for the South East Pipeline System.

5.6 Audits

5.6.1 Operational Audits

During 2003, the Zone 4 Superintendent and the Eastern Maintenance Manager conducted a complete safety and environmental audit of all above ground facilities and the pipeline easement. All areas were inspected for compliance, along with a review of recently completed upgrade projects. No issues were identified as a result of the audit.

Previously, corporate internal audit reviews of an operational nature were conducted by El Paso Corporate Audit division from the USA, however the internal auditing framework within Epic Energy was reviewed in the last quarter of 2003. Based on a high level risk assessment, an internal audit plan was presented to the Audit Committee in December 2003 and the audit plan will in future be undertaken on an Australian based level, using appropriate consulting services and internal auditing resources within Epic Energy.

5.6.2 Environmental Audits

The environmental audit process was taken into consideration in the internal audit framework review referred to above. Audits of environmental management will continue to be undertaken in line with the Environmental Management System (EMS).

An Environmental internal audit is planned to commence in the first quarter of 2004 and will cover the updated EMS of 2003 and the compliance with procedures during 2003.

Whilst no external audit was carried out during the year, internal processes including ground patrols and landowner contact provided a complete coverage of the environmental status of the South East Pipeline system.

In 2003, each property on the South East Pipeline was visited by our South Australian Land Management Officer. The officer spoke to each landholder regarding pipeline safety and environmental issues. At each meeting, landholders were asked to comment on any issues relating to the operation of the pipeline through their land.

Any area of concern or special requirement, such as conditions of entry could then be captured on GPS and recorded on the Epic Energy Land Management System (LMS).

5.6.3 Safety Audits

The safety audit process was taken into consideration in the internal audit framework review referred to above. Audits of safety management will continue to be undertaken in line with the Safety Management System (SMS).

A safety internal audit is planned to commence in the first quarter of 2004 and will cover the SMS practices of 2003 and the compliance with procedures.

5.7 Performance Measurement and Analysis of Results

5.7.1 Maintenance Performance

In 2003, 148 Maintenance tasks were scheduled on the South East Pipeline system from Epic Energy's computerised maintenance management system (Maximo). The tasks were completed by dry creek based Field Maintenance Officers or permanent contractors based in the South East region. The ratio between preventative and corrective maintenance tasks is detailed below;

- 70% Preventative Maintenance tasks; and

- 30% Corrective Maintenance tasks.*

* It should be noted that a percentage of the corrective maintenance tasks throughout 2003 were generated as a result of the upgrade projects conducted at the South East meter stations.

5.7.2 Key Performance Indicators

The following key performance indicators have previously been established to monitor performance of operations and maintenance activities on the South East Pipeline system. Outlined below are the KPI results for 2003.

	2003 target	2003 actual	2003 Comment
Cathodic Protection			
1. Percentage of Pipeline that has an off pipe to soil potential greater than –850 mV (Winter)	95%	100%	Met Target
2. Length of the pipeline protected to the AS 2885 level	95%	100%	Met Target
Third Party Incident			
1. Number of times pipeline is damaged	0	0	Met Target
2. Number of near misses (digging within 1m of pipeline)	0	0	Met target – however one incident of a temporary fence installation across the easement detailed in section 4.4.1
3. Exposure of pipeline due to washout and wind erosion	0	0	Met Target
Unplanned Gas Releases			
1. Number of Relief valve/vent discharges	0	0	Met Target
2. Number of pipeline leaks (more than 200 m3/hr)	0	0	Met Target
3. Amount of gas discharged (m3)	<500scm	<500scm	Met Target
SCADA			
1. Reliability of SCADA	99.5%	99.46%	Scada reliability based on a rolling 3 monthly average. Scada performance is heavily reliant on external infrastructure

5.8 Review and Improvement

In line with the requirements of AS2885.3, to ensure that employees are trained and competent to carry out their tasks, Epic Energy continues to employ the services of Leng Saw from Romeo Consulting, as its dedicated training provider/co-ordinator. This ensures a structured approach in regards to training needs identification and the delivery of services.

Training that was undertaken by field maintenance officers directly responsible for maintaining the South East Pipeline system during 2003 is outlined below.

- Confined Space/Working at Heights awareness training
- “First 5 Minutes” Fire training

- Fatigue and Stress Management training for Field Maintenance Officers and Superintendents.
- Routine Senior First Aid re-certification training
- “POMS” awareness training
- Ongoing “On the Job” training of permanent contractors in the South East Region.

5.8.1 Compliance Issues

Every endeavour is made to ensure that design, manufacture, construction, operation, maintenance and testing of all appropriate facilities is carried out in accordance with AS2885. Any non-compliance identified is logged in Epic Energy’s computerised maintenance management system (Maximo), where they are tracked to conclusion. Significant items are reported directly to PIRSA.

A Statement of Environmental Objectives (SEO’s) for PL3/4 has been drafted post the consultation session held in Mt Gambier in November 2003. The draft SEO’s are in the process of being submitted to PIRSA for review:

The specific objectives declared in the draft SEO’s have been assessed. The results of that assessment are provided in Annex A.

5.8.2 Actions to Rectify Non-Compliance

As reported in section 4.4.1, unauthorised activity occurred in the easement. The landowner was given a safety education presentation together with a letter outlining the responsibilities and obligations of working in or near pipeline easements.

No other significant compliance issues are outstanding. Action items identified as part of the HAZOP study and AS2885 risk assessment have been assessed and prioritised, with a plan in place to address the remaining action items. Several items have been addressed as part of recent upgrade projects as detailed in section 5.1.1.

6.0 CONCLUSIONS

Pipeline coating programs, cathodic protection monitoring, routine maintenance and inspection programs carried out on the South East Pipeline system during 2003, indicate that the pipeline is in sound condition and is capable of operating at set parameters with no restrictions.

Cathodic Protection Survey results, as supplied in Annex B, indicate all areas of the pipeline system met the target performance levels of protection.

The “Fitness For Purpose” report, completed during 2003, in which all areas of the pipeline system were reviewed, further reinforces the above statement.

7.0 ANNEX A – ASSESSMENT OF DECLARED OBJECTIVES

ANNEX A

ASSESSMENT OF DECLARED OBJECTIVES

2003 PL3/4 ANNUAL REPORT

DATED FEBRUARY 2004

2003 PL3&4 ANNUAL REPORT – SOUTH EAST PIPELINE SYSTEM

ASSESSMENT OF DECLARED OBJECTIVES

South East Pipeline Objectives and Assessment Criteria¹

OBJECTIVE	GOAL	ACHIEVED/NOT ACHIEVED	COMMENTS
1. To avoid unnecessary disturbance to 3 rd party infrastructure, landholders or land use	1.1 To minimise disturbance or damage to infrastructure/land use and remediate where disturbance cannot be avoided	Achieved	
	1.2 To minimise disturbance to landholders	Achieved	
2. To maintain soil stability/ integrity	2.1 To remediate erosion as a result of pipeline operations in a timely manner	Achieved	
	2.2 To prevent soil inversion	Achieved	
3. To maintain native vegetation cover on the easement	3.1 To maintain regrowth of native vegetation on the easement to be consistent with surrounding area	Achieved	
	3.2 To minimise additional clearing of native vegetation as part of operational activities	Achieved	
	3.3 To ensure maintenance activities are planned and conducted in a manner that minimises impacts on native fauna	Achieved	Make use of procedures and environmental policies to ensure that this occurs
4. To prevent the spread of weeds and pathogens	4.1 To ensure that weeds and pathogens are controlled at a level that is at least consistent with adjacent land	Achieved	
5. To minimise the impact of the pipeline operations on surface water resources	5.1 To maintain current surface drainage patterns	Achieved	
6. To avoid land or water contamination	6.1 To prevent spills occurring, and if they occur minimise their impact	Achieved	
	6.2 To ensure that rubbish and waste material is disposed of in an appropriate manner.	Achieved	

¹ Assessment criteria have been developed to be “black and white”. Professional judgement is required to assess whether non-compliance is minor or major. It is necessary to ensure that adequate information is available to enable this judgement to be made.

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OBJECTIVE	GOAL	ACHIEVED/NOT ACHIEVED	COMMENTS
	6.3 To prevent impacts as a result of waste water disposal	Achieved (no waste water)	
7. To minimise the risk to public health and safety	7.1 To adequately protect public safety during normal operations	Achieved	Safety and systems reviewed as part of 2003 Fit For Purpose report
	7.2 To adequately protect public safety during maintenance	Achieved	
	7.3 To avoid fires associated with pipeline maintenance activities	Achieved	
	7.4 To prevent unauthorised activity on the easement that may adversely impact on the pipeline integrity	Achieved apart from one encroachment	Refer to section 4.4.1 for further detail
8. Minimise impact of emergency situations	8.1 To minimise the impact as a result of an emergency situation or incident	Achieved	No emergency response incidents reported during 2003
	8.2 To restore any damage that may occur as a result of an emergency situation	Achieved	No emergency response incidents reported during 2003
9. To minimise noise due to operations	9.1 To ensure operations comply with noise standards	Achieved	No reported relief valve operations during 2003
10. To minimise atmospheric emissions	10.1 To eliminate uncontrolled atmospheric emissions	Achieved	
	10.2 To minimise the generation of dust.	Achieved	
11. To adequately protect cultural heritage sites and values during operations and maintenance	11.1 To ensure that identified cultural sites are not disturbed	Achieved	

**8.0 ANNEX B – PIPELINE CATHODIC PROTECTION DATA
AND ON/OFF POTENTIALS PROFILES**

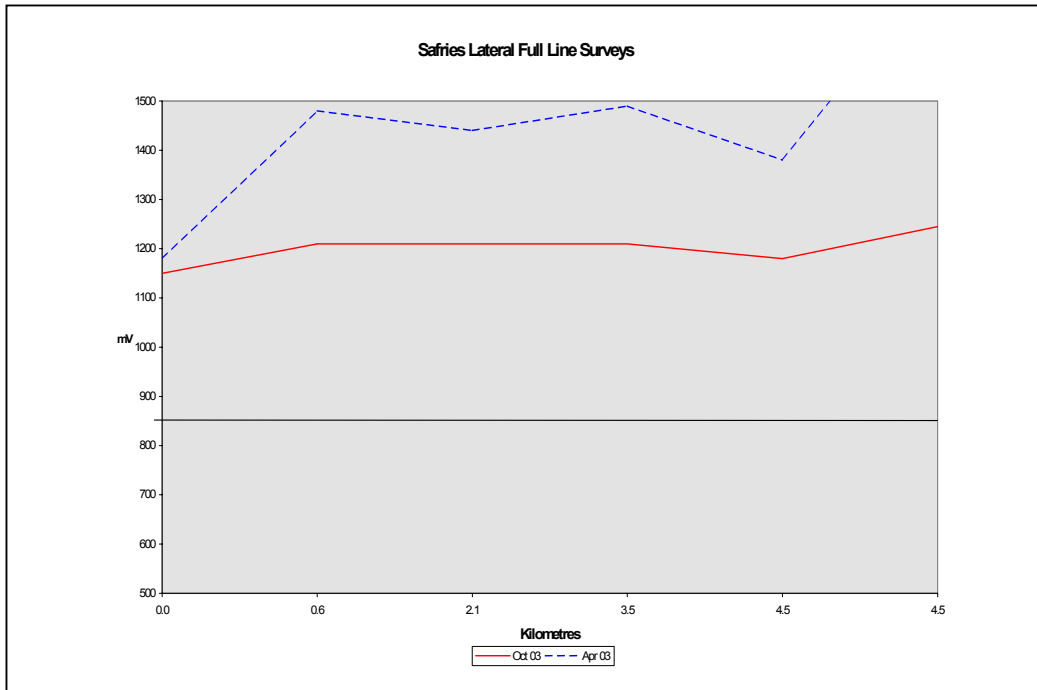
ANNEX B

CATHODIC PROTECTION DATA

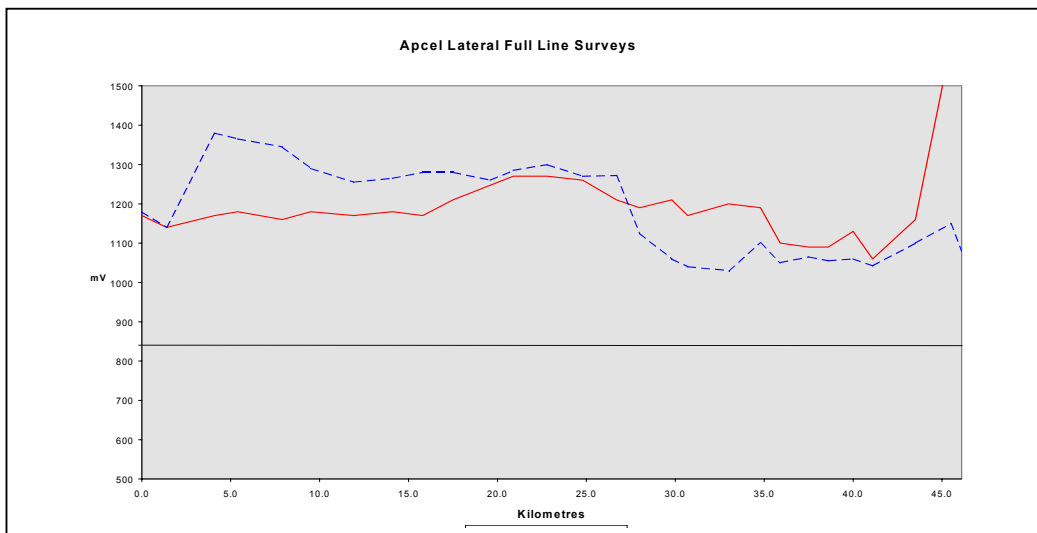
2003 PL3/4 ANNUAL REPORT

DATED FEBRUARY 2004

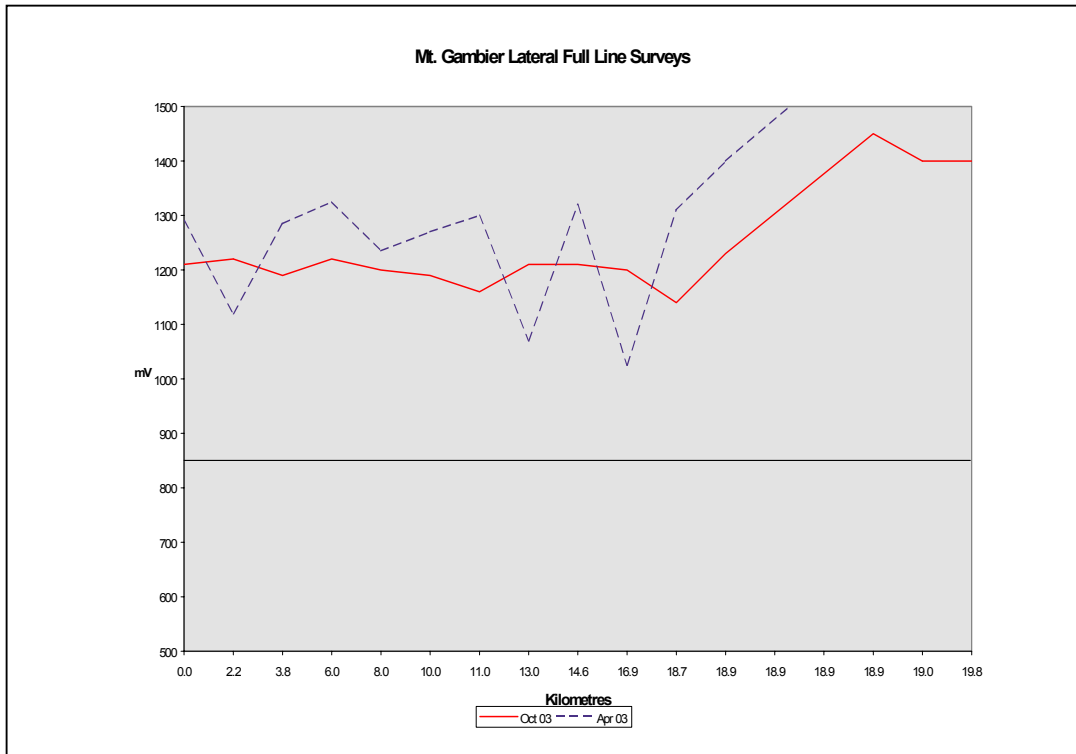
**PIPELINE CATHODIC PROTECTION DATA AND ON/OFF
POTENTIALS PROFILES**



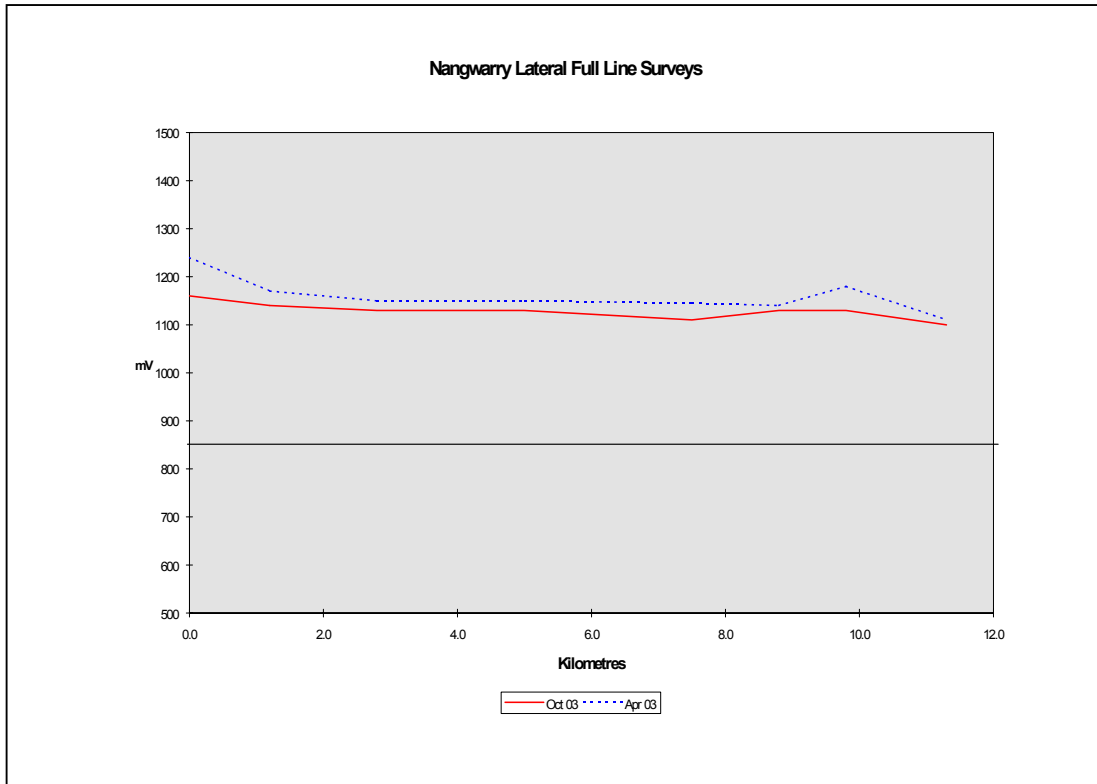
% of potential greater than -850mV in winter (100 %) Length of pipe (4.5km)



% of potential greater than -850mV in winter (100 %) Length of pipe (46.1 km)



% of potential greater than -850mv in winter (100 %) Length of pipe (19.8 km)



% of potential greater than -850mv in winter (100 %) Length of pipe (11.3 km)

**9.0 DIRECT CURRENT VOLTAGE GRADIENT SURVEY
(DCVG)**

ANNEX C

DIRECT CURRENT VOLTAGE GRADIENT SURVEY (DCVG)

2003 PL3/4 ANNUAL REPORT

DATED OCTOBER 2003

CONDUCTED JUNE 2003

EPIC ENERGY

Pipeline Coating and Protection Assessment Survey

In accordance with instructions from Epic Energy, Gippsland Cathodic Protection Services conducted coating defect and protection assessment surveys on the sections of pipeline nominated below.

1. South East Pipeline System, total 84.5 kms.

The surveys were conducted during the period from the 9th to the 26th of June, 2003. All coating defects, which could be reliably identified, were recorded.

In addition to the above, we were also required to record all pipeline features including road, river and foreign structure crossings using a differentially corrected global positioning system.

Digital photos of road crossings were also taken and which are to be incorporated in Epic Energy database.

Survey Method

The coating defect surveys were conducted utilising our most recently developed M6000 signal voltage Generator wherever possible. This generator provides an AC waveform, which ensures that safety standards are maintained, and that coating stress and excessive pipe/earth polarisation is avoided. The low frequency of the signal ensures that misleading effects and inaccuracies due to reactive circuit components are also avoided.

The basic principle of operation is to apply a signal voltage between the pipeline and earth, this signal voltage is used to assess protection attenuation characteristics and to locate coating defects and IR loss by soil voltage gradient measurement.

The severity of each defect is expressed as a ratio of soil potential measured from a point above the defect to remote earth, compared to the pipe to remote earth signal at that point. The ratio is expressed as a percentage, (%IR). The %IR at each coating defect represents the loss of protection sustained for any applied level of cathodic protection. The %IR methodology is not a representation of coating defect size.

Survey Results

The results of the coating defect surveys have been tabulated in the attached appendices for each of the pipeline sections nominated above. The results are inclusive of the GPS co-ordinates for each of the defects located and the associated %IR loss.

A summary of the number of defects located for each of the pipelines surveyed have been summarised as follows.

1. Glencoe Junction to Mt. Gambier, 3 defects.
2. Katnook to Kimberley Clarke, 3 defects.
3. Katnook to Safries meter station, no defects detected.
4. Kalangadoo to Nangwarry, no defects detected.

A total of six defects were detected, two defects were less than 14%, three defects were between 15 - 30% and one defect was found to be greater than 30%.

The methodology adopted by GCPS in undertaking pipeline coating defect and protection assessment surveys is to maintain pipe to soil potentials more negative than -0.850 Volts with respect to a Cu/CuSO₄ reference and to refurbish all coating defects greater than 15% IR, this is now a generally accepted industry standard.

We suspect that the coating defects detected adjacent to the point where the pipe enters and leaves the ground at the meter stations namely Katnook, Kimberley Clarke and Mt. Gambier are at possible concrete anchor blocks. The coating defect detected outside the Glencoe Junction compound on the Mt. Gambier pipeline however, appears to be too remote to be at an anchor block. Since this defect is less than 15 %IR no further action is presently required.

The coating defect detected at test point KP 11.0 on the Mt. Gambier pipeline we suspect is a possible shorted potential lead at the point of entry at the base of the test point post. Pipe to soil potentials measured at this location would be within a negative soil gradient and would therefore indicate a reduced level of protection at the point of measurement. The test point should be exposed and the contact removed.

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GPS POSITIONING DATA			Feature Distance		Glenco Junction - Mt Gambier		JUNE 2003			
Coordinate System: UTM Zone 54			From Original		Glenco Junction - Mt Gambier		Measured %IR			
Datum: WGS 84		Calculated	From Original		Glenco Junction - Mt Gambier		Measured %IR			
Differentially Corrected		Distance	Pipeline Easement		Pipeline	Defect				
North	East	Klm	Survey		Feature	Description	Number	>30%	15-30%	<14%
5832128.115	468506.932	0.000			Cyclone Fence	Glencoe Junction Compound				
5832120.864	468525.835	0.020			Coating Defect	Approx 25m D/S compound fence	1			12
5824960.742	475846.466	11.000			Test Point 11.0 Kp	Possible sorted potential lead to base of TP	2		24	
5817742.402	478565.670	18.714			Cyclone Fence	Mt. Gambier Meter Station				
5817741.402	478565.408	18.715			Coating Defect	Approx 1.5m D/S compound fence. Possible anchor block.	3	40		

2003 PL3&4 ANNUAL REPORT – SOUTH EAST PIPELINE SYSTEM

GPS POSITIONING DATA										
Coordinate System: UTM Zone 54			Feature Distance				JUNE 2003			
Datum: WGS 84		Calculated	From Original		Katnook to Kimberley Clarke		Measured %IR			
Differentially Corrected		Distance	Pipeline Easement		Pipeline	Defect				
North	East	Klm	Survey		Feature	Description	Number	>30%	15-30%	<14%
5854662.554	480993.581	0.000			Pig Launcher	Katnook Station Compound, pipe enters ground				
5854659.441	480990.935	0.004			Coating Defect	Possible anchor block	1		21	
5843947.708	472070.061	13.998			Coating Defect	Possible cable connection to pipe	2			7.50
5843845.837	472069.359	14.100			Test Point KP 14.1					
5830037.924	450568.686	39.653			Coating Defect	Kimberley Clarke meter station. Approx 1.5m U/S	3		25	
5830038.578	450585.261	39.669			Cyclone Fence	Kimberley Clarke meter station				