

**ASX RELEASE****SHIELDLINER SYSTEM™ SUCCESSFULLY DEMONSTRATED USING EPOXY RESIN**

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- **ShieldLiner System™ successfully demonstrated using epoxy resin**
- **Use of epoxy resins allows potential future potable water solution**
- **Potable water market has few competitive technologies**
- **Part of Commercial Ready Program**

Vortex Pipes Limited (ASX Code: VTX), has successfully demonstrated its ShieldLiner™ System using epoxy resin in its in house testing facilities. The company (formally known as ShieldLiner Ltd.) has now completed several trials using epoxy resin and had encouraging results in all trials.

Vortex Managing Director Trevor Gosatti said that the successful trials were an important milestone in the development of the ShieldLiner™ System.

“The use of epoxy resin using the ShieldLiner™ System is an important step towards providing a comprehensive potable water pipe relining solution.

“Upon achieving certification for potable water using this industry standard epoxy we can enter this large market place where few technical solutions exist for the refurbishment of high pressure large diameter pipes” he said.

Mains water infrastructure, such as the Perth to Kalgoorlie pipeline in Western Australia, exists on all continents. Many of these pipe infrastructures are in need of maintenance or replacement.

“With few relining technologies capable of relining large diameter high pressure water pipes we believe the Shieldliner solution will be well received by contactors and asset owners alike” said Mr Gosatti.

Vortex has previously trialed Shieldliner™ using vinyl ester resins to demonstrate its unique pipe lining technology. These resin systems may be used in the sewer or drainage pipe refurbishment markets where the barriers to entry are lower but there are more competing technologies than the potable water markets.

“The use of epoxy resin using the ShieldLiner™ System is one of the milestones in our research and development program towards a commercial outcome, which has been previously announced,” he said.

The company is currently in its second year of a program to support the further development and commercialisation of the ShieldLiner™ System under the AusIndustry Commercial Ready Grant program, as announced last year. Vortex was offered up to \$1.28 million under this scheme, and has been completing research and development under this program with a view to having a commercial ready technology at the end of calendar year 2008.

“Whilst we still have further milestones to achieve, we are now in a better position to develop the ShieldLiner™ System as a solution for relining large diameter water pipes in the future,” he said.

**ENDS**



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### Background on Vortex Pipes Limited

Vortex Pipes Limited listed on the ASX in August 2004 as ShieldLiner Limited, a company focused on the development of its proprietary ShieldLiner<sup>®</sup> System, a trenchless technology for the in-situ repair and rehabilitation of pipes.

The Company has continued to develop the ShieldLiner<sup>®</sup> System and in doing so recognised an opportunity to establish an integrated pipe services business providing a range of trenchless and composite technology solutions.

Vortex, through acquisitions, is evolving into an integrated pipe services and supply company with three distinct business units

- Vortex Rehabilitation
- Vortex Cleaning; and
- Vortex Composite Pipes

### Vortex Rehabilitation Business Unit

Vortex's subsidiary (Premium Pipe Services) is the Australian and New Zealand distributor and installer of the Saertex cured in place liner system. This system uses ultra violet light technology to cure a pre-impregnated fibreglass and resin liner. It offers many environmental, space utilisation and time advantages over other methods as well as providing a premium product. The Saertex system is an excellent **pipe rehabilitation solution for gravity sewer, stormwater and non pressure pipe primarily in smaller diameter pipes.**

The ShieldLiner system is a unique multi layered pipe lining technology developed and owned by Vortex that has the potential for lining, repairing and sealing pipelines in situ to prevent leakage, improve structural integrity and decrease flow friction. The ShieldLiner<sup>®</sup> System is being developed primarily **for rehabilitation of larger diameter pipes high pressure and potable water pipes.**

As part of Vortex's pipe rehabilitation solution the Company has recently completed several **pipe bursting jobs** and is looking to expand its use of this technology, in particular in Western Australia.

#### *Shieldliner in more detail*

ShieldLiner's unique pipe repair and rehabilitation system involves the insertion of a tool that travels along the pipe being rehabilitated, delivering and compacting resin to fill and repair cracks and holes whilst at the same time forming a continuous fibreglass liner which is bonded to the host pipe. The system requires two access points to the pipe. The liner package is introduced behind the ShieldLiner tool at one end and then inverted using an air pressure chamber. At the other end resin, catalyst, air and electronic monitoring wiring are delivered to the tool from a surface rig. The tool travels from the air pressure chamber access point towards the surface rig, driven by the inverting liner.

The major competitive advantages of the ShieldLiner system include lower costs, better sealing and reinforcement and repair of the existing pipe together with improved mechanical performance and faster project turnarounds. It is unique in that it leaves no annulus in the newly rehabilitated host pipe.

### Vortex Cleaning

Vortex's Pipe Services division provides specialist pipe services, utilising leading edge technologies including

- **CCTV pipe inspections**, (using robotic CCTV equipment, pole camera equipment and lateral camera equipment)
- **pipe cleaning and jetting**, (using high pressure water and cutting equipment)
- **drain and gully cleaning** (utilising mechanical suction and vacuum equipment).



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The Company is planning to expand capabilities in this area through the acquisition and license use of further unique cleaning technologies.

### **Vortex Composite Pipe**

Vortex is the exclusive distributor for Australia and New Zealand for a range of glass reinforced epoxy ("GRE") pipes and fittings manufactured by FiberGlass Systems LP ("FGS") of San Antonio, Texas.

FGS is a leading worldwide manufacturer of fibreglass reinforced epoxy pipe products used primarily **for corrosion control in low to high pressure applications of enhanced oil recovery projects**. The products also have **applications in the gas, water, marine offshore, industrial and chemical industries** and have temperature ratings of up to 220 degrees (104.4C), depending on resin system. Unlike steel pipes the pipes require no protective coatings and their use reduces maintenance costs caused by corrosion. The pipes are light and easy to handle and less personnel and equipment is needed during installation. FGS markets its products under the trade names Star, Smith and Fibercast.

Vortex is looking to further enhance its composite pipe solutions in the near future.

### **What are Trenchless Technologies?**

Trenchless technologies are techniques for the installation, replacement, renovation and repair of pipes, ducts and other underground apparatus with minimum excavation from the surface, and also include associated techniques such as leak detection, inspection and location of existing infrastructure.

The surge in the development and application of trenchless technologies over the last 30 years has had a significant impact in Australia and internationally. The costs and problems of maintaining aging pipe infrastructure are well documented with many water mains, sewers and sewerage pumping mains in Australia and internationally exceeding, or approaching, their design life. Similar asset management issues apply to underground gas distribution, electricity mains and telecommunications systems.

Utilities and infrastructure owners have a huge investment in underground pipelines, cables and conduits and there is an increasing awareness of the favourable economics of renovating, or maintaining an already expensive hole-in-the-ground. Traditional open-cut excavation methods for installing, renovating or maintaining services are often disruptive and uneconomical and the true social costs and environmental impact of such disruption are generally not taken into account. This has resulted in an ever increasing demand for methods of pipeline installation and refurbishment which have the capability of performing this work without the need for trenching.

The world needs improved capabilities to reline pipes economically as an alternative to replacement, which causes disruption to services, roads and the environment.

In addition, asset owners of large pipe networks in industrial plants in the oil, gas and mining industries are also seeking economic solutions for the repair and rehabilitation of their pipe networks that do not involve production losses associated with longer down times generally associated with pipe replacement.

The market potential for Vortex's composite and trenchless technology solutions which include the ShieldLiner® System is significant, with a large proportion of both gravity pipes, such as sewers and drainage, and pressure pipes, such as water and gas mains, in cities around the world either exceeding or approaching their design life and in need of rehabilitation or replacement. However, the cost and disruption involved in digging up and replacing or repairing underground pipes is a significant issue for asset owners and managers such as utilities and infrastructure groups.

The problem is magnified by the growing need to preserve ground water, and massive expenditures are now being devoted to the maintenance and rehabilitation of pipe infrastructure to address the issue of ground water pollution and ground water infiltration due to leaking and failing pipes.

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