

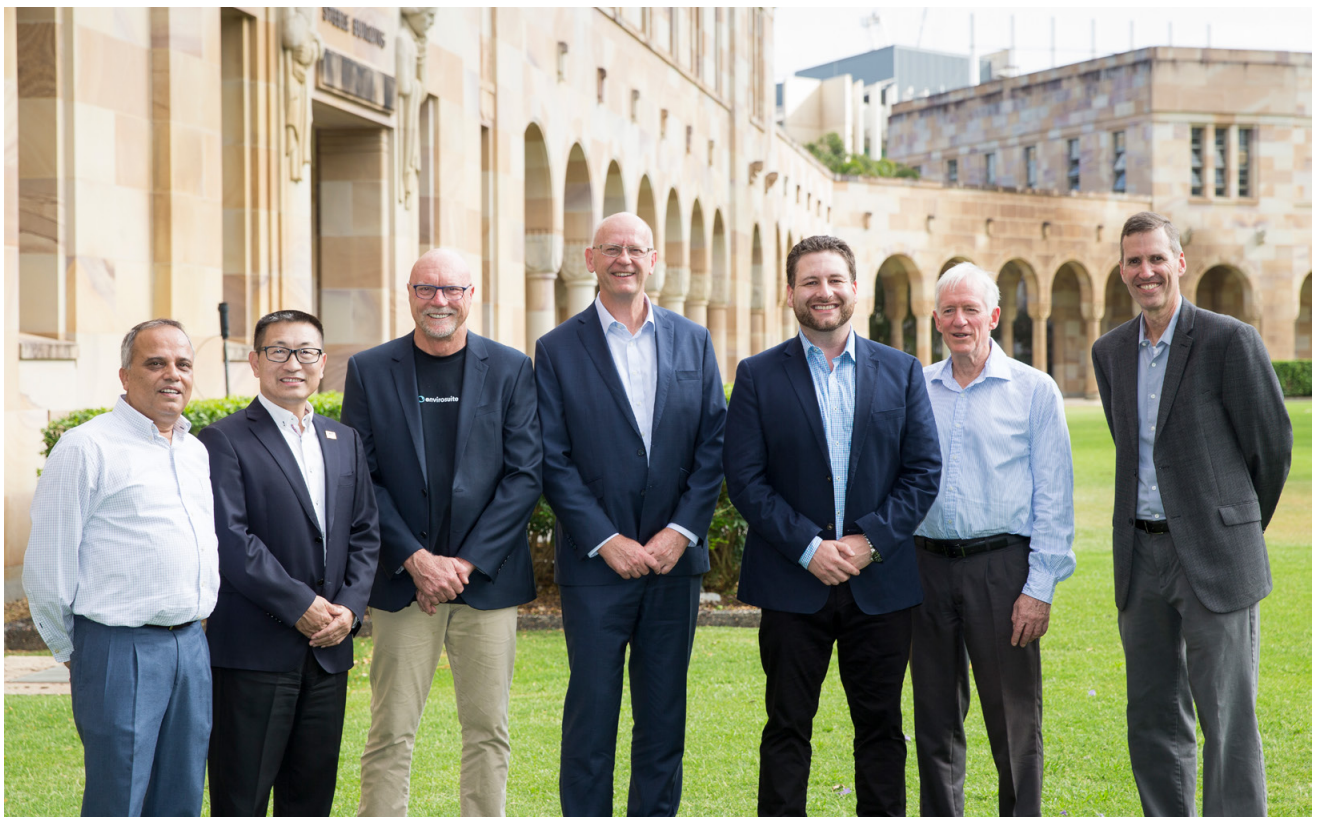
ASX Announcement

Global licence agreement signed for wastewater management technology - SeweX®

2 December 2019

Highlights

- Envirosuite signs an exclusive global IP licence agreement with UniQuest for SeweX
- Commercially proven IP for application to wastewater operations and infrastructure asset management
- Transitions Envirosuite to a core solution for the wastewater industry



Above (from left): Dr Keshab Sharma, Senior Research Fellow (AWMC), Prof. Zhiguo Yuan, AM, Director (AWMC), Mr Robin Ormerod, Chief Scientist (EVS), Mr Peter White, CEO (EVS), Mr Alister Morrison, Senior Director & Head of Physical Sciences (Uniquist), Mr Howard Leemon, Innovation and Commercialisation Manager (Uniquist), Mr Derek Stephens, Director, Commercialisation - Physical Sciences (Uniquist)

Environmental management technology company Envirosuite Limited (ASX:EVS) ('Envirosuite' or 'the Company') is delighted to announce that it has signed an exclusive, worldwide, twenty-year licence agreement with the University of Queensland's technology transfer company UniQuest, in order to take the award-winning¹ SeweX technology to the global stage.

SeweX is an advanced mathematical modelling tool describing the physical, chemical and biological processes in sewers. It has been developed over many years by some of the world's leading wastewater experts at the University of Queensland's Advanced Water Management Centre (AWMC) in conjunction with several major Australian water utilities.

The SeweX model is designed to identify the areas within a sewer network at high risk of increased levels of corrosion and odour production. Envirosuite will build on the existing SeweX model and integrate it into the existing software platform.

Based on the application of the SeweX IP to date, the new solution when launched as part of the Envirosuite platform is expected to be able to assist network operators to materially reduce core operating and capital costs through predictive identification of corrosion and odour-risk priority areas enabling optimisation of chemical dosing for in-sewer sulphide control.

Traditional methods for managing corrosion are slow to evidence results or rely on strategies that are expensive or inefficient. To optimally reduce both operating and capital costs and extend the life of their assets, operators need and are seeking proactive solutions that can be provided by SeweX modelling technology incorporated into Envirosuite's world-leading monitoring, modelling and management platform.

SeweX has attracted global interest from water utilities and first sales of the new solution as an offering through the Envirosuite platform are anticipated to commence in the first half of the 2020 calendar year.

The Market

Sewer corrosion is a major problem in urban infrastructure globally and leads to the need for expensive rehabilitation (repair and renovation). Corrosion problems can severely limit the lifetime of sewer network assets. Corrosion is also closely linked to odour generation in sewers.

Sewer corrosion costs many tens of billions of dollars annually: estimates are currently AU\$20bn annually in the United Kingdom², over AU\$50bn in the USA³ and AU\$1bn in Australia⁴. In China, approximately AU\$10bn was invested in sewer network construction in 2014 alone and this amount is projected to increase rapidly⁵. However, pro-active methods of corrosion control have not yet been widely applied and assets are at significant risk of premature failure as a result. The cost of replacement and maintenance for single wastewater authorities can cost several hundred million dollars.

SeweX technology

To date SeweX has been successfully commercially applied on a consultancy basis and has identified over \$100 million in potential future savings in only the minor subsets of the water utilities to which it has been so far applied. Incorporating the technology in Envirosuite's platform provides for a highly scalable and on-going subscription-based offering with a compelling ROI proposition.

Lead researcher and AWMC Director Professor Zhiguo Yuan, AM, explains that,

"Corrosion and odour problems in sewers are most often caused by sulphate-reducing bacteria in sewer biofilms that produce hydrogen sulphide. Hydrogen sulphide is released into the atmosphere above the wastewater, causing odour problems, and is converted by sulphide-oxidising bacteria into sulphuric acid, which is corrosive to concrete sewer pipes."

"Sewer networks can include many kilometres of sewer pipe and various topographical elements, such as rising mains, gravity mains, pumping stations and manholes. It is practically difficult to physically inspect all these structures to identify corrosion issues, making modelling a more efficient and cost-effective alternative."

Commercially proven – Historical case studies for SeweX

Controlling sulphide generation and build up in the wastewater system is the main objective of odour and corrosion management. Advanced Water Management Centre researchers have collaborated with several Australian water authorities to test and demonstrate the capabilities of SeweX in real world applications.

- **Sydney Water** Sydney Water spends over \$50 million a year managing odour and corrosion in its wastewater system. This money is spent on renewal of corroded assets as well as chemical dosing and odour treatment to reduce sulphide levels in the wastewater network and odour impact on communities. Utilising SeweX modelling, strategies for 5 of its 26 wastewater systems were developed and implemented with cost savings of over \$100 million over 30 years identified for these systems using SeweX in combination with Sydney Water's decision support analyses.
- At Bellambi in NSW, SeweX was applied in two ways: firstly, as a profile model based on typical sewer conditions to guide the design of a dosing system to reduce sulphide levels, which achieved over 90% reduction on average; and secondly to drive a predictive dosing experiment that produced another 50% reduction in sulphides while using 25% less dosing chemical.

Case study reference www.sewex.com.au/case-studies

Envirosuite solution

Envirosuite Chief Scientist Robin Ormerod said,

"This technology sees towns and cities reducing odour issues, and wastewater operators saving millions of dollars every year in operational costs and consumer complaint management."

"This partnership is an exciting one. Bringing together tools like SeweX, which has been developed by some of the leading academic minds in the water industry, with Envirosuite's strength in technology and focus on digitalising wastewater management, is extremely powerful."

Peter White, CEO of Envirosuite Limited explains that,

"As we have continued to expand our business in our target industry verticals of mining and wastewater we have seen the opportunity to extend our solutions from air quality management to include the digitalisation of other aspects of operations. Extending Envirosuite's sophisticated monitoring and management platform to optimise productive outcomes for our clients is expected to increase value perception and bind us closer to our customers."

"The exclusive licencing deal for Sewex IP is potentially the most significant strategic technical step forward that the Company has taken since the rebuild of the first generation of the Envirosuite platform that set us off on our journey as a world-leading provider of environmental management solutions."

"We believe that the application of SeweX within the Envirosuite platform will see us take our value proposition to the wastewater sector from peripheral to core operations, with a high and determinable P&L impact for clients. This positions our offering for broad industry adoption at much higher average contract values."

"The timing could not be better with our entry into China which is the world's largest market for our offering. The SeweX opportunity is expected to further bolster the size and scope of the projects that are opening up for us in China."

UniQuest CEO Dr Dean Moss said,

"It is fantastic to see UQ research helping an Australian company like Envirosuite to drive key improvements to the way water utilities manage wastewater to benefit communities right across the country, and even globally."



Above: Concept for how SeweX may be visualised in the EnviroSuite user interface.

Further to the information contained in this announcement and in accordance with ASX Guidance Note 8 to listing rules 3.1-3.1B the Company advises that:

The term of the Licence Agreement is 20 years from the date of signing and may then be extended by mutual agreement. EnviroSuite is required to pay a nominal amount up-front for the licence and then after two years a royalty of 12% of gross revenues generated from sales that make use of the licence.

The minimum performance requirements to maintain the rights to the licence are as follows:

- Year 3 - \$300,000 in gross sales
- Year 4 - \$600,000 in gross sales
- Year 5 - \$1,000,000 in gross sales.

Although the exact financial quantification cannot be known at this time EnviroSuite believes that the licence is sufficiently significant to warrant disclosure as:

1. The Company anticipates that the number of contracts for the Company in aggregate and the average contract size for platform subscriptions that incorporate the SeweX IP will be materially higher than the historical averages due to:

- the size of the market that the solution addresses and the apparent market need
- the exclusivity provides EnviroSuite with a unique competitive advantage
- the successful implementations that SeweX has already demonstrated point to the industry value and thus the potential commercial value to EnviroSuite.

2. The Company intends to well exceed the cumulative \$1.9m in revenues as set out above that are required to be achieved over the next five years to maintain the terms of the licence, and that the achievement of those revenues will materially add to group revenues.

EnviroSuite confirms that there are no other:

- material conditions that need to be satisfied before the parties become legally bound to proceed with the licence agreement; or
- other material information relevant to assessing the impact of the contract on the price or value of the Company's securities.

About Envirosuite

Envirosuite Limited is an environmental management technology company that has developed a leading Solution-as-a-Service offering which translates data into action in real-time.

Using proprietary algorithms built on more than 30 years of environmental consulting experience, the Envirosuite platform provides a range of environmental monitoring, management and investigative capabilities.

The Envirosuite platform is used worldwide by a range of clients in the mining, water and waste management, heavy industry, ports and agricultural industry sectors and as well by governments looking to regulate industry in accordance with community well-being.

To learn more, please visit: www.envirosuite.com

About University of Queensland AWMC / UniQuest

UniQuest commercialises research at The University of Queensland to create change and deliver solutions for a better world. Established in 1984, it is Australia's leading technology transfer company. UniQuest's innovation portfolio includes Australia's first blockbuster vaccine Gardasil®, the internationally acclaimed Triple P-Positive Parenting Program, and UQ's superconductor technology, which is used in most of the world's MRI machines. In 2015, UniQuest's spin-out company Spinifex Pharmaceuticals secured Australia's largest ever biotechnology acquisition. UniQuest's commercialisation impact makes UQ Australia's leading university for licence income and value of equity held in spin-out companies*.

*National Survey of Research Commercialisation, Department of Industry, Innovation and Science, 2016.

¹ Business/Higher Education Round Table Award 2014 for outstanding achievement in collaboration between business and higher education in the fields of research and development, <http://www.awmc.uq.edu.au/sewer-science-research-reaps-rewards-bhert-awards>

International Water Association (IWA) Asia Pacific Regional Project Innovation Award for Applied Research, 2014, <http://www.awmc.uq.edu.au/sewer-research-team-wins-iwa-award>

International Water Association (IWA) Global Project Innovation Award (Applied Research), 2014, <http://www.awmc.uq.edu.au/sewer-technology-brings-global-honour-score-team>

Professor Zhiguo Yuan receives ATSE Clunies Ross Award, <https://watersensitivecities.org.au/content/professor-zhiguo-yuan-receives-atse-clunies-ross-award/>

² Frost & Sullivan paper to British Water International Forum Meeting 2016

³ FHWA (2002) Corrosion costs and strategies in the United States, Summary of Federal Highways Administration Publication FHWA-RD-01-156: <http://impact.nace.org/documents/ccsupp.pdf>

⁴ ACA (2010) The Australian Corrosion Association Inc. Corrosion Challenge Project, Australian Corrosion Association, in DNV GL – Report No. OAPUS310GK0CH (PP110272-)-1, Rev. 3, <http://impact.nace.org/documents/appendix-a.pdf>

⁵ Huang, D., Liu, X., Jiang, S., Wang, H., Wang, J., Zhang, Y. (2018) Current state and future perspectives of sewer networks in urban China, *Frontiers of Environmental Science and Engineering*, SpringerLink, <https://link.springer.com/article/10.1007%2Fs1178>