

# New Tech, Bubbles and Seair

A while back we looked at new technology that could change the lithium game. New processes, much more efficient and friendly to the environment, can be expected to springboard Pure Energy Minerals Ltd. (TSXV: PE) from exploration to production in record time.

That game-changing theme continues with Seair Inc. (TSXV: SDS) and its tiny bubbles. Seair calls its technology SWEET (Superior Water Emulsion Effacing Treatment).

First, the problem.

In the oil patch it's a fact of everyday life that producers must separate water from oil. For over a hundred years the most common separation technique was a wash tank (also known as a gunbarrel) but the oil crisis in the 1970's prompted the exploration of better separation techniques. (Click here for a 2005 review of that era and of one of the resulting solutions )

Run the phrase "oil /water separation" through your own search engine and see what you find. I lost a few hours doing research by clicking on "just one more link" and finding just one more interesting link. The fact that there are so many companies with so many solutions proves how large and persistent the market is.

Estimate of annual global market = \$8 Billion.

But, a discerning cynical reader will say, if there are so many solutions and solutions providers, why makes SWEET special / different / better?

SWEET lowers the cost of operation. In traditional membrane systems the targeted mixture must be pumped through the membrane, and this mechanical pumping is energy-intensive. As

a passive system SWEET doesn't have this cost. Further, these membranes are fouled over time, causing them to lose their effectiveness and require replacing. Seair doesn't have those problems.

Seair can separate more oil at a lower cost than any competing process. Customer payback ranges from only 3 – 6 months, an astounding short period of time.

That's nice, says that same discerning reader, but the company has been around since 2008 or so. What's different now?

There are two answers to that, one based on the technology and the other on the people.

First, let's look at Seair's tech and its bubbles. A bubble is like porn – we all know what it is but it's kind of hard to describe. Technically a bubble is a blob of one substance suspended or moving in another substance, usually gas in a liquid. Nucleation and the Marangoni Effect provide the science background to the creation, lifespan and death of bubbles. (I have no idea how physics would describe porn.)

SWEET is applied science that is, at its simplest, a bubble maker.

This bubble making technology is a passive device – it has no moving parts, and no power requirements.

According to the company, SWEET starts with the target liquid being passed through a patented Diffusion Chamber, where a prescribed treatment gas is diffused into the liquid. Micro-bubbles with up to 10,000 times the surface area of conventional diffusion devices are created in the Diffusion Chamber, allowing for the rapid mass transfer of gas into the liquid. This creates a supersaturated fluid which retains up to 99% of the treatment gas in a stable condition. A stable, supersaturated fluid means less gas, less chemical and less power is used to treat more fluid.

Doing more with less should translate to lower cost and significantly higher throughput rates for the oil company.

So if the SWEET tech works in theory, we return to our question above, "What's different now". What's different, and it's a huge difference, is that Seair has moved from the lab into the field.

In May/15 Seair announced a paid, full scale demonstration of SWEET at a major oil producer's field operation. The goal is to process up to 5000 cubic metres per day. A successful demonstration could lead to permanent adoption of SWEET at that demonstration site and the possible placement of additional systems at other sites. And note that it's a PAID demonstration.

Seair has commercialized the technology.

The other part of "What's different now" is the people. A new team has been installed, most recently as June/15 with two new directors joining the board. This team, led by CEO Jeff Seibert, has been mandated to commercialize the SWEET technology. Enough research – let's go make some money!

Some proof of this can be found in Seair's April/15 announcement of a formal exclusive strategic partnership with Renewable Fluid Services (RFS), a U.S. based process and product development company. Seair will provide SWEET to RFS to use in their oil recovery process. This partnership is limited to the Middle East where RFS has an exclusive marketing partnership with AlMansoori Specialized Engineering, the leading provider of oilfield services in the Middle East.

Read that press release and the company's other disclosure documents at its SEDAR page.

The conversation above looked at only the \$8 Billion O&G market. Seair's technology enables waste water and industrial fluid treatment solutions across the mining, municipal,

agriculture, greenhouses, food processing and industrial emissions sectors, each of them a massive sector to attack.

As always, there are risks. The leadership team has to gel into a driving force to overcome the historic research-focussed inertia. The investor relations department must become more engaged with the current and prospective shareholder base. The SWEET technology has to survive the field test. The marketing team must penetrate the target markets. The company has to survive its weak balance sheet by generating sufficient cashflow to carry its costs or to justify an equity raise.

By commercializing its technology and transforming its team, Seair is positioning itself to bubble its way to an evolutionary 2015 and 2016.