

Tormont50: Identifying timely topics and trends in the sub-\$300 million market.

Research Type: **Update**

Timeliness: **Near-term**

Date: **October 19, 2018**

Mineworx Technologies Ltd.

MWX \$0.185



TSXV Exchange | OTCQB: MWXRF | FSE: YRS | Market Cap \$55.4M

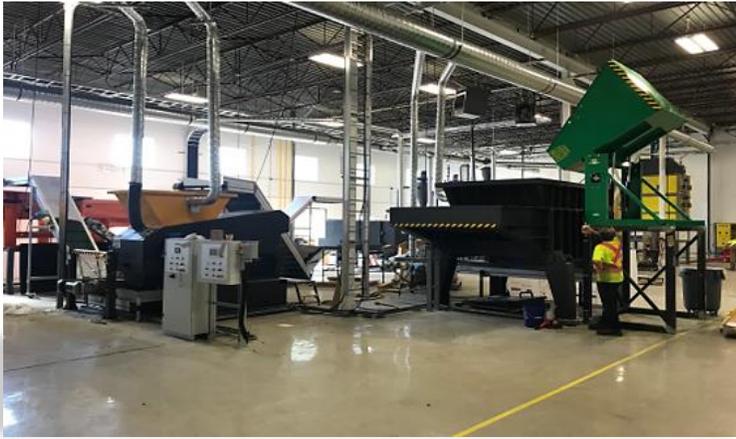
Update: Mineworx continues to represent one of the largest potential end-market stocks in the Tormont50 universe, with a target that includes a significant portion of the global E-Waste industry. While the stock chart still reflects the time, cost and uncertainty required to improve the process technology, this additional effort has had an unforeseen, but highly positive outcome. Ironically, the enhancements designed by the Mineworx/EnviroLeach team have created a 2.0 version of the prior system that is faster, more efficient, and can do a wider range of materials – expanding the scope and potential market for the story.

For investors and followers of the stock this boils down to a cliched, but appropriate statement – ***If you liked the story before, the 2.0 version of the technology is even better.***



Refresh: For those of you who lost track of or have never explored the Mineworx business, the company and its JV partner EnviroLeach Technologies adapted mining equipment and added proprietary science to create the greenest and most efficient E-Waste metals recovery system ever designed. The closed-loop technology relies on a “dry side” (Mineworx) process that pulverizes the materials and an environmentally-friendly “wet side” (EnviroLeach) process that separates out the precious and other metals without the use of traditional pollutants such as cyanide.

After testing at a pilot plant, EnviroLeach signed an on-site deal for a real-world plant at a leading electronics manufacturer in Memphis, Tennessee. The JV team completed the Memphis installation in January 2018, but subsequently ran into an unforeseen issue – the original design was too feedstock specific. The range of types of printed circuit boards and other electronic waste that the customer wished to process was different than the feedstock from the original tests, leading to sub-optimal results in the real-world plant application.



The Solution: Engineers at the partner companies began to study the problem and discovered that the issue was on the dry (Mineworx) side of the process. Testing showed that tweaks to the process, involving new equipment and protocols, could solve the issues experienced at the Memphis plant.

Because the JV is at the commercialization phase, a commercial-size facility was required to test the newly designed “concentration” equipment that is required at the front-end of the process. On October 4th, 2018, this plant was completed in Vancouver, ironically 3,900 miles from the 1st commercial installation in

Memphis. The JV rightly believed that it could accomplish its work more efficiently nearer to home and the plant was designed and built in only three months. The site of the new concentration plant is at the planned JV-owned Vancouver location, and is slated for commercial launch prior to the end of 2018.

The New Three-Stage Consolidation Plant: To accommodate the processing of larger scale E-Waste such as complete power supplies, computer servers, and set top boxes, engineers added a large 4 cubic meter pre-shredder to the line. The Vancouver operation processed about 10 tonnes over its first two weeks in operation, meeting required speed and quality goals. The end result was a very high-quality, pure metal concentrate that is easily saleable to refining partners. The plant will ramp to its designed rate of 20 tonnes per day once it is fully operational. In November 2018, the companies will ship 20 tonnes of material from the Vancouver plant to the Memphis facility for full-scale tank leaching and final testing.

Major Impact on the Commercialization Story: This is a rare case where the proverbial *trip back to the drawing board* resulted in a far better solution. The redesigned material concentration portion of the line significantly expands the kind of E-Waste that can be processed and improves the yield in four categories:

- Greater copper-based precious metals concentrate, which can be sold to refiners
- Increased ferrous metal and aluminum fraction, which can be sold to recyclers
- Higher quality light substrate fraction, which contains 50% of the precious metals value and can be run through the “wet” EnviroLeach process
- And, importantly, a post-leach substrate material, or tailings, which can be repurposed for construction materials.

Although final results will not be known until the test materials are run through the Memphis facility, the combined process is expected to result in metal recovery rates in the 90% to 95% range – an industry best.

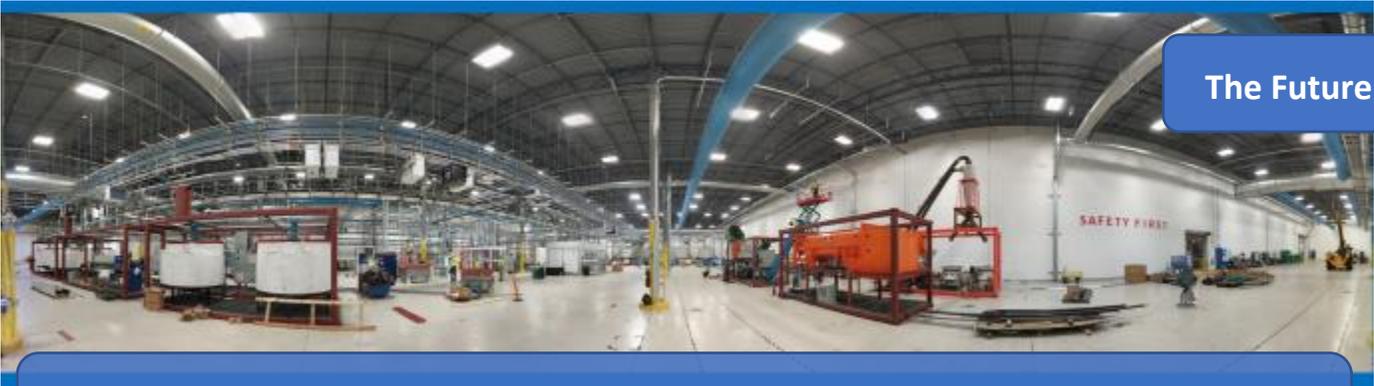
With this capture potential, Mineworx and EnviroLeach have created the most complete recycling solution ever devised for E-Waste, with the world’s first zero emission process.



The Present

Historically, the processing of E-Waste has been a labor intensive and inefficient process with significant pollution from acid, smelting and burning, along with considerable landfill waste after metals recovery.





The Mineworx/EnviroLeach plant will be a true “green” process, with no emissions during processing and the potential for 100% reclamation of the feedstock, including post-processing material.

What’s Next? The slurry from the Vancouver plant will be processed in Memphis, essentially creating a 3,900-mile-wide version of a completed plant site. If results are as promising as expected, the JV partners will essentially have two glasses half full in the form of two half-finished plants, with the Vancouver plant needing a “wet” side and the Memphis plant needing the new “dry side” installed. The time line is not set yet on the completion at each site (pending the final test), but both plants could theoretically become active as full commercial operations fairly rapidly (3 months or less for Memphis). The Vancouver site was planned for 2019 to follow the Memphis site, but now has a head start on that construction schedule as well.

Final Thoughts: On closer inspection, many eco-friendly practices are less “friendly” than advertised – and E-Waste may be the worst of any of the “green” feel-good programs in existence. Today’s processing is actually a heavy polluter due to the reliance on rather indiscriminate smelting to capture the precious metals.

It is impossible to understate the impact that the new Mineworx/EnviroLeach technology can have on the processing of E-Waste, which has been very much in the news in 2018. China’s crackdown as the dumping ground for E-Waste and efforts to police the problem on a regional level are not a solution. E-Waste must find a home and as the accompanying graphic from *The Guardian* shows, this waste is leaking into new venues after China closed its borders to the world’s cast-off electronics.

Now that a solution is in hand, **the issues faced at the Memphis plant can be viewed as a blessing in disguise for Mineworx– as the 2.0 version of the process is far more efficient and can process a wider range of E-Waste.** This story took a necessary break while the technology was tweaked, but investors will get an update in the very near future after the resulting materials make their way through the Memphis line. This is a near-term event, making this an excellent time to revisit this important, potentially transformative story.

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