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## **Major Commissioning Milestone Reached**

### Key Highlights:

- Wet commissioning phase involving bioconversion underway
- Organic materials now being introduced into the bioconversion facilities for aerobic processing and production of compost
- Anaerobic processing to commence upon completion of aerobic phase which will produce biogas and compost
- The aerobic/anaerobic bioconversion cycle was successfully demonstrated by Anaeco in 2009/2010
- Full plant Ramp-up phase scheduled to commence on completion of the aerobic/anaerobic wet commissioning tests, in a few weeks time.

### **Bioconversion Facility (BCF) – commencement of aerobic composting in commissioning**

Anaeco has reached a significant milestone in the wet commissioning of the Anaeco AWT Plant at the WMRC's Shenton Park Resource Recovery Facility with the introduction of organic material into one of the bioconversion vessels. Approximately 65t of organic material separated from municipal solid waste (MSW) by the MRF is being used to commence a batch for aerobic processing, producing compost.

The purpose of this aerobic batch is to test and commission the first bioconversion vessel (V1) and related equipment used in aerobic composting. This includes, the vessel conveying systems (used for loading, re-circulation, dewatering and unloading) and the pressure aeration system (creates the pressurised aerobic conditions to achieve the efficient in-vessel composting of organics). The 65t batch of organic material will remain in V1 for three weeks after which it will be unloaded as compost. The aerobic batch will not generate biogas. Whilst the aerobic batch is composting in V1, commissioning of equipment in V2 and V3 will be completed. (Enclosed as Figure 5 is a picture of organic material being conveyed into bioconversion vessel V1.)

After successfully completing the aerobic commissioning of the three BCF vessels the next phase will be to prepare for anaerobic digestion. The seed batch of anaerobic biology is scheduled to be loaded into the plant in a few weeks time. To commission the BCF for anaerobic digestion each of the three bioconversion vessels will be tested through the bioconversion transition phases without organic material present in the vessels. This means transitioning from an aerobic state to anaerobic, holding in anaerobic state for a short term and then returning from anaerobic to aerobic. This is programmed to occur over a relatively short period of approximately 10 days.

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AnaeCo already successfully demonstrated the complete aerobic > anaerobic > aerobic bioconversion cycle in the Stage 1 performance trials in 2009/2010 and accordingly is confident that commissioning of the three vessels for use in bioconversion will be comparatively straightforward.

Upon completion of commissioning the three bioconversion vessels for anaerobic digestion, the plant will be ready to commence the Ramp-up phase. Ramp-up means the progressive build up of operations of the whole plant at a rate which is determined by the rate of growth of the biological culture. It will take approximately 18 weeks for the initial load of anaerobic biology to grow to full operational scale. This occurs naturally as the bacteria conduct anaerobic digestion, during which they feed and multiply. The organic material processing scale up during Ramp-up is approximately 10 times (per vessel), and the biological scale up is approximately 100 times. Biogas will be generated during the Ramp-up phase, and at this stage will be flared off rather than used to generate electricity.

### **Material Recovery Facility (MRF) Commissioning**

AnaeCo previously advised that MRF wet commissioning was progressing well, with a focus on the Wet Density Separation System (WDS). We noted that some adjustments were to be done on screen and mesh sizes in the water filtration circuit, and the next steps were to increase throughput and running times. Those adjustments have now been largely completed with progressive tuning being carried out on the overall efficiency of the separation process. During this work we concluded on the need to increase the capacity of a drainage screen. The replacement screen will be installed immediately after the abovementioned 65t aerobic batch has been loaded. Throughout the period of adjusting the WDS we have continued commissioning in the MRF, albeit at lower tonnages than planned to facilitate the WDS adjustments. The WDS continues to perform its main purpose of separating glass and grit from the post trommel sized organic fraction, thereby creating the organic feedstock for bioconversion. When reinstallation of the drainage screen is completed we will proceed to increase MRF throughput in accordance with the Ramp-up schedule (progressively increasing weekly vessel loading from ~ 70t of organic material to ~ 730t over an 18 week term). (Enclosed as Figures 1 to 4 is a series of pictures showing MSW loading, recovered ferrous metal recyclables and material input and output from the Wet Density Separation system.)

Commenting on the progress of Commissioning AnaeCo CEO David Lymburn said, "We are very pleased to have advanced to wet commissioning involving bioconversion and the commencement of this 65t batch of aerobic processing is a great milestone for the technology and for our team, who have worked very hard to get here. Commencement of Ramp-up is now firmly in sight and we are really excited to be getting so close to running the whole AnaeCo™ System at this plant."

ENDS

For further information, please contact:

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Images from wet commissioning of the AnaeCo AWT Plant at the WMRC's Shenton Park Resource Recovery Facility (March 2014)



Fig1: Municipal solid waste (MSW) loaded onto trommel (March 2014).



Fig 2: Ferrous metal recyclables recovered from MSW (March 2014).



Fig 3: Post-trommelled fraction of MSW conveyed into Wet Density Separation system (March 2014).

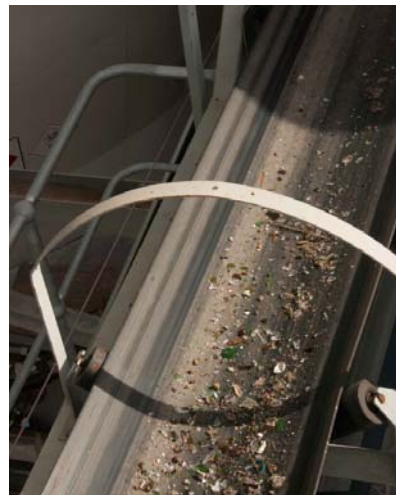


Fig 4: Glass, grit and other inert heavies removed from MSW by Wet Density Separation system (March 2014).



Fig 5: Organic fraction post Wet Density Separation conveyed into bioconversion vessel V1 (March 2014).



Fig 6: Bioconversion vessel number one (V1) (March 2014).

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### **About AnaeCo**

AnaeCo delivers Alternative Waste Technology (AWT) facilities based on the AnaeCo™ System, incorporating the patented DiCOM™ bioconversion process. The AnaeCo™ System includes advanced sorting, recycling, anaerobic digestion and aerobic composting to recycle municipal solid waste (MSW) into renewable energy from biogas, agricultural grade compost and recyclables such as steel, aluminium, glass and plastics, thus maximising diversion from landfill and ensuring social, economic and environmentally sustainable management of MSW.

The AnaeCo™ System enables resource recovery intervention closer to source, with enhancement of existing waste transfer stations now a viable waste management option. AnaeCo's experienced team provides design, and commissioning services for AnaeCo™ AWT facilities.

For further information go to [www.anaeco.com](http://www.anaeco.com)

### **About the WMRC Project**

The WMRC Project involves the construction and commissioning of an AnaeCo™ AWT Plant at the JFR McGeough Resource Recovery Facility in Shenton Park, Western Australia.

The JFR McGeough RRF is a solid waste transfer station owned and operated by the Western Metropolitan Regional Council.

The AnaeCo™ AWT Plant is an asset owned by Funds managed by Palisade Investment Partners Ltd and is contracted to receive 55,000tpa of MSW.

The WMRC Project is the first full operational scale installation of the AnaeCo™ System and is a transfer station retro-fit occupying less than 4,000m<sup>2</sup>.