Biosolids – from catchment to catchment Biosolids from source to end-use

Karen Campisano

AECOM

November 13, 2013

Evolution of Biosolids Management

Biosolids originated as a waste generated from the process of treating sewage.

Management of biosolids (production and end use) has since become incorporated into wastewater management.

The process of biosolids production and use has predominantly been a linear one to date.

Regulation has focused on land-application.

As natural resources become less available, efficiency in extraction, use and recovery is likely to drive greater levels of process and catchment integration.



WASTEwater treatment





Biosolids as a WASTE





Source: Kofifi Thusano (Pty) Ltd. 2005

November 22, 2013



By-Product Reuse



Beneficial use – Land Application



From Catchment to Catchment

11/22/2013



Beneficial use – Land Application, Product Augmentation



11/22/2013



Bio-DunderTM – the perfect match? (adapted from CSR, 2009)

 By-product of ethanol production from molasses fermentation

 Predominantly contains potassium

 Requires N, P and H₂SO₄ to provide a balanced fertilizer to end users

> http://www.csr.com.au/Investor-Centre-and-News/Documents/files/pres/20090331-090330%20-%20Ethanol%20presentation.pdf

From Catchment to Catchment

11/22/2013







Resource Recovery



Beneficial Use – Market Diversification





- Technology Development
- Product Development
- Market Development







Biosolids Products



From Catchment to Catchment

November 22, 2013



Biosolids Management



November 22, 2013



Treatment Process Management



November 22, 2013



Wastewater Network Management





Wastewater Catchment Managment







Residential



November 22, 2013



Wastewater System Management



Integrated Catchment – Systems approach



November 22, 2013



Integrated Catchment Management



From Catchment to Catchment

11/22/2013



Biosolids - Syngas





Biosolids - Syngas - Methanol





Biosolids – Syngas – Methanol – Products - Wastewater



From Catchment to Catchment

11/22/2013









From Catchment to Catchment

11/22/2013



System Boundaries



- Broader boundaries, Increased Complexity
- Regulatory Difficulties
- Liability

- Greater resource efficiency
- Potential lower holistic cost



Thank You

Karen.campisano@aecom.com

