



Class A biosolids generated at Metro Vancouver's Annacis Island Wastewater Treatment Plant. Improving product quality can increase flexibility in beneficial end-use options.

SOURCE MANAGEMENT INITIATIVES AND BIOSOLIDS QUALITY IMPROVEMENT

Client: Metro Vancouver

In 2011, the Utility Residuals Division of Metro Vancouver (MV) managed over 60,000 bulk tonnes of biosolids and water treatment residuals. Product quality is a key determinant in beneficial management options. Continuous sampling and analysis ensures regulatory compliance. Improving product quality by reducing the concentration of undesirable constituents is an ever present objective. As part of its Liquid Waste Management Plan, MV sought to determine linkages between source management initiatives and biosolids quality. Improving biosolids product quality can increase flexibility in end-use options and extend biosolids management opportunities. SYLVIS was retained to investigate biosolids quality achieved in similarly sized jurisdictions and identify the factors that influenced this quality. The investigation, focused on trace elements regulated under the British Columbia Organic Matter Recycling Regulation, consisted of a literature review, extensive jurisdictional survey and report.

SYLVIS contacted and assessed 30 jurisdictions as potential participants in this study. From this list, 11 jurisdictions from Canada, the United States, Australia and New Zealand were selected for inclusion in the study. A comprehensive survey was distributed to each jurisdiction, requesting information on wastewater treatment processes, biosolids management, regulatory and source management frameworks, current and planned source management initiatives and data on wastewater influent and effluent quality, biosolids and drinking water. Data provided by each jurisdiction were collected and analyzed, and short-term and long-term biosolids quality trends identified. Factors influencing these observed biosolids quality trends were identified. Specific to source management, an assessment of individual source management tools and drivers for source management provided further evidence on the effectiveness of these initiatives.

Biosolids quality from MV's Annacis Island wastewater treatment plant was generally comparable to other participating jurisdictions with the exception of higher copper and mercury concentrations. Buffering drinking water will decrease copper concentrations. A reduction in mercury concentration can be realized by dental industry-specific initiatives. Jurisdictions realized reductions of up to 50% in biosolids mercury concentrations by implementing source management initiatives that require the separation and disposal of mercury-containing dental amalgam from wastewater discharged into chair-side sinks. Implementation of several of the recommended source management initiatives resulted in improved biosolids quality and increased flexibility in biosolids management. SYLVIS's understanding of biosolids quality together with our connections with wastewater treatment practitioners around the world resulted in source management initiatives that continue to improve residuals quality.

AREAS OF EXPERTISE

Applied Research
Consultation & Education
Operational Management

> Options Assessment & Development

Policy & Practices

RESIDUALS

Ash

> Biosolids

Effluent and Leachate
Pulp and Paper Residuals
Unique Residuals
Water Treatments Residuals

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