

Interesting Waste Types and What you can do?!

SWANA Northern Lights Conference Winnipeg 2025

By Steve Johnson M.Eng., P.Eng.

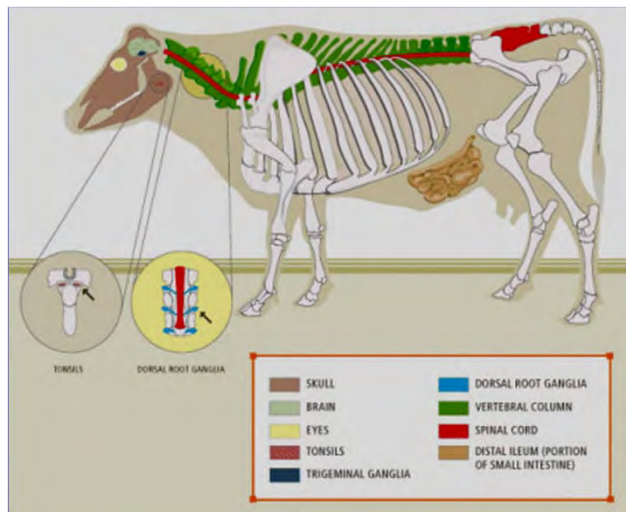
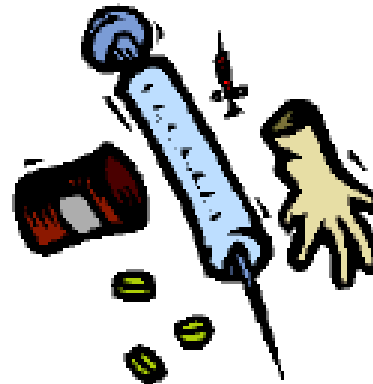
Introduction

- Regulatory
- Wood waste
- Animal and Animal byproducts
- Sulphur
- Mattresses



Waste Disposal – Reality Check

- Landfills are not designed, operated and/or permitted to accept all wastes



Waste Types – Regulatory

- Difference between Hazardous and Non-Hazardous Waste
 - Saskatchewan: Hazardous Substances and Waste Dangerous Goods Regulation
 - Manitoba: Dangerous Goods and Handling Transportation Act
 - NWT: Guideline for general management of Hazardous Waste in NWT
 - Nunavut: Environmental Guideline for General Management of Hazardous Waste
 - Alberta: Waste Control Regulation/Users Guide for Waste Managers
- Provincial Waste Diversion Programs
 - Tires
 - Used Oil
 - Beverage containers
 - Others (organics, recyclables, C&D)

Wood Waste

What types of special/problem wood waste do you receive? What ones need special handling procedures? What are the issues?

Types

- Telephone Poles
- Rail Ties
- Pallets
- Burn outs
- Hurricane wood debris

Issues

- Compaction/settlement
- Preservatives/paint
- Impact to operation
- Fire risk
- Space
- Available equipment /contractors to process

Wood Waste

What are typical handling/management procedures?

- Cut to specific lengths before disposal, prepare area and coordinate receiving time
- Grind and use for compost or other site activities
- Sort and reuse
- Energy from waste
- Circular Economy/Net Zero Waste/LEED/deconstruction bylaw
- Burn pit
- Stockpile
- Cut up for local firewood

Wood Waste

Iqaluit – Building Fires

- Environmental evaluation report
- Process/divert what can be managed at site (metal)
- Prepare receiving area
- Coordinate disposal time
- Place as per Fill Plan
- Pictures from Jeff Macmunn



Wood Waste

Hurricane Fiona Debris

Pictures from Roschell Clarke



Plan for disaster debris – space and processing equipment

Animals and Animal byproducts

What types of animal and animal products do you receive? What ones need special handling procedures? What are the issues?

Issues

- Odour
- High moisture
- Vectors (flies, scavengers)
- Compaction/settlement
- Impact to operation
- Disease
- Equipment available
- Carbon amendment available



Pictures by City of Winnipeg

Animals and Animal byproducts

Sources

- Animal barn fires
- Provincial and Federal regulated diseases
- Abattoir waste (diseased?)
- Food recalls
- Spoiled grocery waste/ milk trucks/ice cream
- Animal shipping highway accidents
- Wildlife road kill and culls

Management Options

- Special waste process – prepare area, cover
- Composting (at source or at approved facility)
- Division of waste amongst landfill facilities subject to tonnage
- Mass dead animal disposal pits as per Regulatory Disaster Planning
- Divert to food rescue agencies or industrial animal farms
- Anaerobic Digestion

Regulatory

To confirm with your regulatory agency but typically there are no limits or restrictions on animal or animal parts disposal in landfills except for Federally/Provincially Regulated Animal Disease wastes and where CFIA must be present to witness disposal

Animals and Animal byproducts

Manitoba Example – PIGS

Two landfills in Manitoba approved for mortality disposal

Geographic area has >150,000 pigs

>1000 t/wk deadstock during porcine epidemic diarrhea outbreak.



Pictures by City of Winnipeg

Animals and Animal byproducts

City of Winnipeg Pig Disposal Test Trial

- Typical deadstock volumes by Taco or Trench method
- When an abundance (Animal Disease, barn fire) need other methods
- Pilot project for shallow pits with carbon amendment based on United States Department of Agriculture (USDA) recently published Guidelines for the Emergency Use of Above Ground Burial to Manage Catastrophic Livestock Mortality (January 2021)
- General decomposition in up to two years. Some have not degraded after 4 years

Animals and Animal byproducts

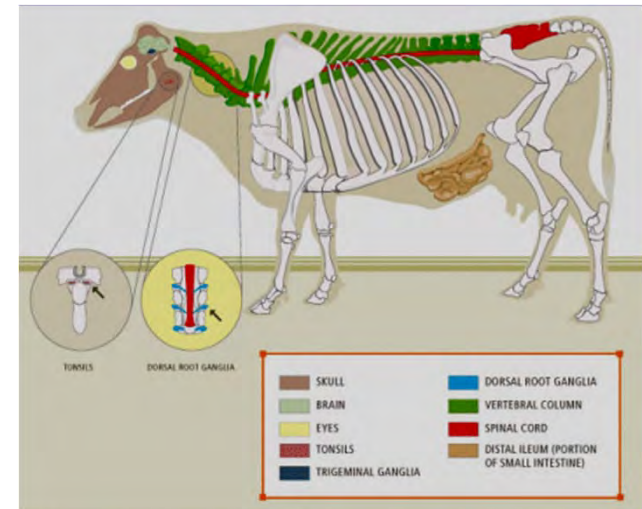
- Nova Scotia Marine Animals
 - Washed up seals, porpoises, dolphins and whales become the responsibility of the municipality for disposal (federal law!)
 - Tow out to sea and sink
 - Haul to landfill for burial (prepare area)
 - Haul to compost facility (prepare for grinding and have enough carbon amendment)



Animals and Animal byproducts

BSE Wastes

- Red Deer area abattoir and meat processor needs to get rid of cattle parts and local landfill would not take it
- Verbal check on if BSE – abattoir said it isn't
- Buried with MSW as per standard procedure
- CFIA inspector at gate following waste truck



Animals and Animal byproducts

ICE Cream

- Nestle ice cream - No longer for sale (changed label)
- 53 ft trailer full ice cream load
- Regular dairy product disposal
- CFIA inspector required



Do you want it – Sulphur Waste

Do you accept sulphur waste. If so, what is your procedure? What are the issues

Sources

Oil and Gas industry

Regulatory:

Alberta – Sulphur Disposal Guidelines

Encapsulate, lime mixing



Sulphur Waste

Issues

- H₂S with landfill gas
- Disposal/recirculation of leachate
- Clogging of leachate collection system

What are management/disposal options

- Oilfield waste landfills with synthetic liners and leachate collection systems with procedures in place to manage sulphur wastes
- Design and construct a separate cell for the waste
- Design and construct a cell within a cell (synthetic cap, lime encapsulation)

Mattresses

Do you accept mattresses? Is so, how do you manage them? What are the issues?

Issues

- Difficult to compact
- Loss of airspace
- Wire wrap

Mattresses

Sources

- Hotels/motels
- Public

Regulatory

- No issue

Management options

- 3rd party processor
- On site processing (cut apart and segregate materials)
- Shredder
- Place at active waste toe and cover with MSW
- Divert or share waste with other landfills

Waste Types – Final thoughts

- Everything we create becomes waste
- Expect the unexpected
- How you manage it depends on your equipment, waste facility design, regulatory environment, skill, and resources
- There is always an interesting waste disposal story to tell

Thank you.

steve.johnson2@aecom.com