2016 SWANA CONFERENCE

Thorhild Landfill Development
Waste Management of Canada Corporation

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Introduction
Thorhild Landfill Project

• Site location and development overview
• County partnerships
• Siting process (drilling)
• Zoning and Development permit process
• AEP Approval process
• Recommendations
Quick Facts
Thorhild Landfill Project

• Class II Non-Hazardous Landfill
• Centrally located in Alberta 90 kms north of Edmonton
• Alberta’s Industrial Heartland is nearby - within a 45 minute drive
• Total land: 454 hectares (1121 acres)
• Total permitted footprint: 85 hectares (210 acres)
• Permitted estimated site life - approx. 70 years
• Landfill: estimated capacity 23 million m$^3$
• Cell 1A: 5.5 hectares (13.6 acres)
Location
Thorhild Landfill Project
Site Overview
Thorhild Landfill Project

CN Rail
RR210
HWY 63
RR205
Site Overview
Thorhild Landfill Project
Southwest Storm Water Pond
Thorhild Landfill Project
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Thorhild Landfill Project
East Pond - Firewater Pumping System
Thorhild Landfill Project
Wetlands Compensation Program
Thorhild Landfill Project
The First Cell
Thorhild Landfill Project

- 5.5 ha cell construction
- 325,000 m³ soil excavation
- 700,000 m³ built waste capacity
- Operational fall 2014 (first waste acceptance fall 2015)
- Next phase of cell construction planned 2017
Landfill Design - Cell 1 Composite Liner System
Thorhild Landfill Project

DETAIL
SCALE: NTB
TYPICAL BASE
First Load of Waste
Thorhild Landfill Project
Cell 1 - Leachate Withdrawal System
Thorhild Landfill Project
Leachate Risers
Thorhild Landfill Project
Leachate Risers
Thorhild Landfill Project
Leachate Pond and Riser Pipes
Thorhild Landfill Project

GEOMEMBRANE LINER
GEONET
PREPARED SUBGRADE

TYPICAL POND BASE LINER
SCALE: NTS
APPLICABLE TO LEACHATE POND ONLY
Scales, Scalehouse & Office
Thorhild Landfill Project
Maintenance Shop
Thorhild Landfill Project
Entrance and game fence
Thorhild Landfill Project
Tipper
Thorhild Landfill Project
Quality Assurance Plan
Thorhild Landfill Project

- Salvaging of topsoil and subsoil
- Compacted clay liner installation
- Geomembrane liner installation
- Geotextile, pipe, drainage rock installation
- Leachate conveyance and pond installation
- General construction practices
- As-built reporting
- Weekly construction meetings open to County and agencies
Community Relations
Thorhild Landfill Project

- Hosting agreement prior to landfill siting in 2006
- Public relations (website, newsletters, open houses)
- Property Value Protection and Impact Benefits program
- Donations to local charities/organizations (WM has invested over $400,000 in the community)
- Annual royalty fee
- Preference to local labour and suppliers
- Concerned Citizens of Thorhild County Society - landfill opponents
Community Engagement
Thorhild Landfill Project

- Community Advisory Committee
  - Advises regarding operations and community engagement
  - Meeting since January 2011
  - Members volunteer their time
  - Members must be county residents
  - Members bring varied perspectives which enriches discussion
- Quarterly community meetings & tours
- Open & transparent dialog
Landfill Siting - Drilling Program
Thorhild Landfill Project

• Hydrogeological Assessment report
• Drilling program conducted in 2006 over five quarter sections meeting the 200 m spacing requirement in the Standard for Landfills in Alberta.
• Over 100 boreholes completed with over 90 wells completed as monitoring wells
• Monitoring of adjacent landowners with 2.4 km water wells and dug-outs completed in 2007 and 2009 as part of baseline program
Landfill Siting - Baseline Program
Thorhild Landfill Project

- Additional studies include:
- Landfill Disclosure plan - as required by Landfill Standards
- Noise Impact Assessment - assess baseline noise monitoring and noise modelling for proposed landfill to assess impact to surrounding residents
- Wildlife - assess baseline habitat, bird and mammal species. Changes to habitat from proposed landfill design and operations. Species at Risk and nuisance wildlife assessment
- Vegetation and wetlands - assess baseline soil (soil types/classification) and vegetation (invasive species, rare plants, existing vegetation)
- Paleontological and Historical Resources assessments
- Road access - conceptual access options and impact on local residents
- Preliminary Closure - conceptual landfill phasing to a design top of waste and associated sight lines from adjacent residents and transportation corridors
- Landfill gas generation assessment
Permit and Approval Process Timeline
Thorhild Landfill Project

- 2006: Project announced
- 2008: First rezoning application
- 2009: Second rezoning application
- 2010: Public hearings and rezoning granted
- 2011: Municipal development permit granted and construction begins (road access)

- 2010: EPEA and Water Act approval application submission
- 2011: EPEA and Water Act approvals issued
- 2012/3: Mediation and Environmental Appeal Board hearings
- 2013: Ministerial Order issued
- 2015: Final Operating Approval received
Landfill Siting Process Recommendations
Thorhild Landfill Project

- Council (watch for election cycle, favorable/non-favorable - can be an election issue)
- Lead time (plan for 10 years or more if controversial)
- Land purchase (buffer zone within owned property)
- Staffing for consultants, proponent, regulatory agencies - (staff turn-over so systems needed to track developments and support new staff)
- Public relations (initiated early in siting process to minimize public dis-information and to provide politicians an overview of solid waste management and the siting/approval process)
- Budget (public consultation, consultants, legal, etc.)
Questions?