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Making a difference, together

Millersville Landfill and Resource Recovery Facility

Cell 9 Proposed Vertical Expansion

MDE Refuse Disposal Permit Public Informational Meeting

MAY 23, 2024 5:30 PM

DPWandYOU.com

Geosyntec consultants

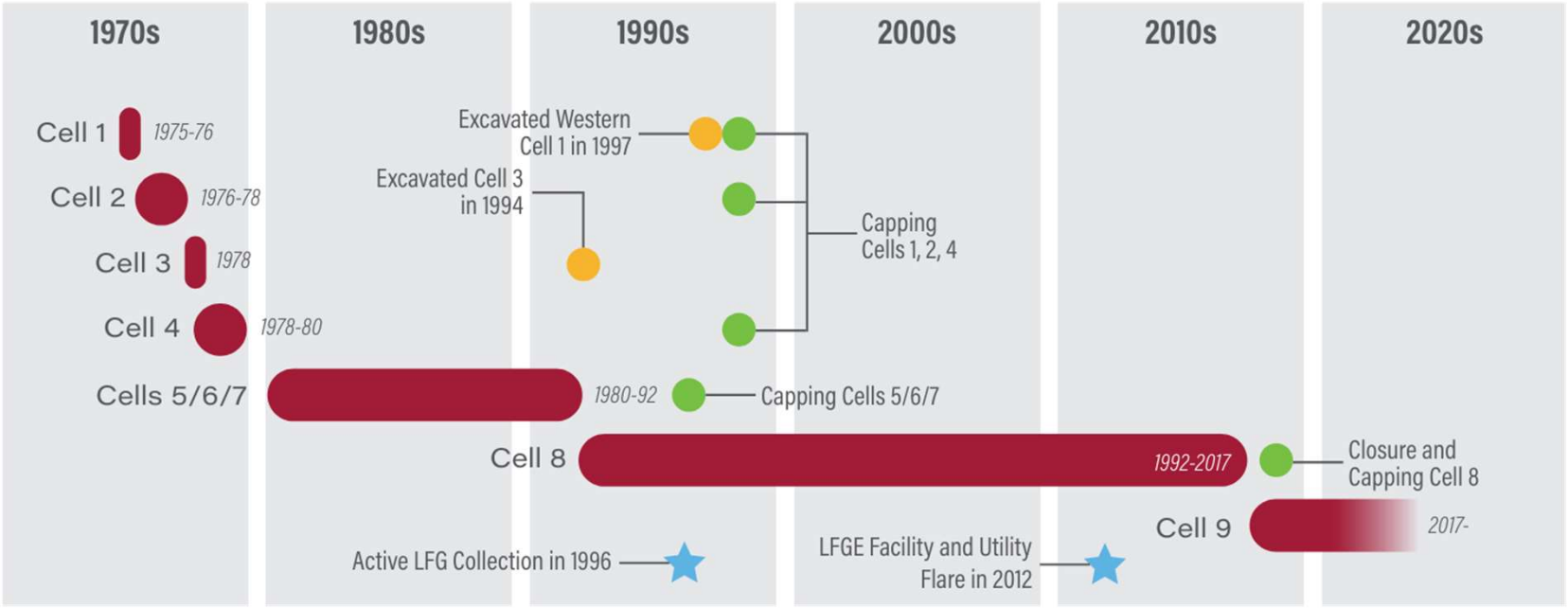
Meeting Agenda

- Introductions
- Brief History of Millersville Landfill
- Cell 9 Background
- Permit Application for Proposed Expansion

Millersville Landfill and Resource Recovery Facility

- Only municipal solid waste landfill in Anne Arundel County
- Resource Recovery
  - Yard debris composting and mulching
  - Scrap metal and appliance recycling
  - Cardboard baling and recycling
  - Central recycling center for residents
- Municipal Waste Disposal
  - Waste disposal for County residents and businesses

Brief History of Millersville Landfill



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Anne Arundel County Solid Waste Planning

10-YEAR
SOLID WASTE
MANAGEMENT PLAN
2024-2033

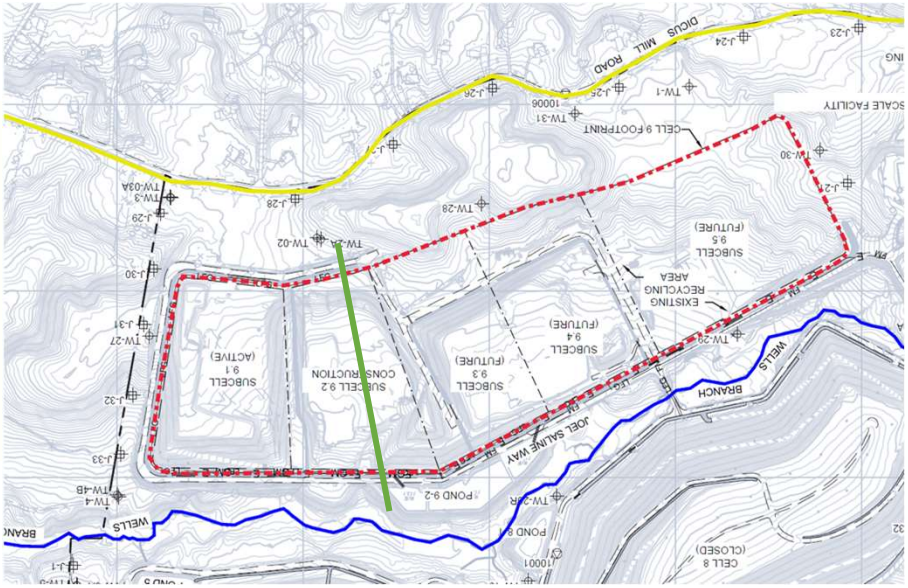
Plan2040 (GDP)

- Optimize recycling programs
- Maximize the life expectancy of the Millersville Landfill

10-Yr Solid Waste Plan

- Increase remaining landfill capacity
  - Operational efficiencies
  - Vertically expand Cell 9
- Study opportunities for the future (in progress)

Millersville Landfill Cell 9



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Millersville Landfill Cell 9

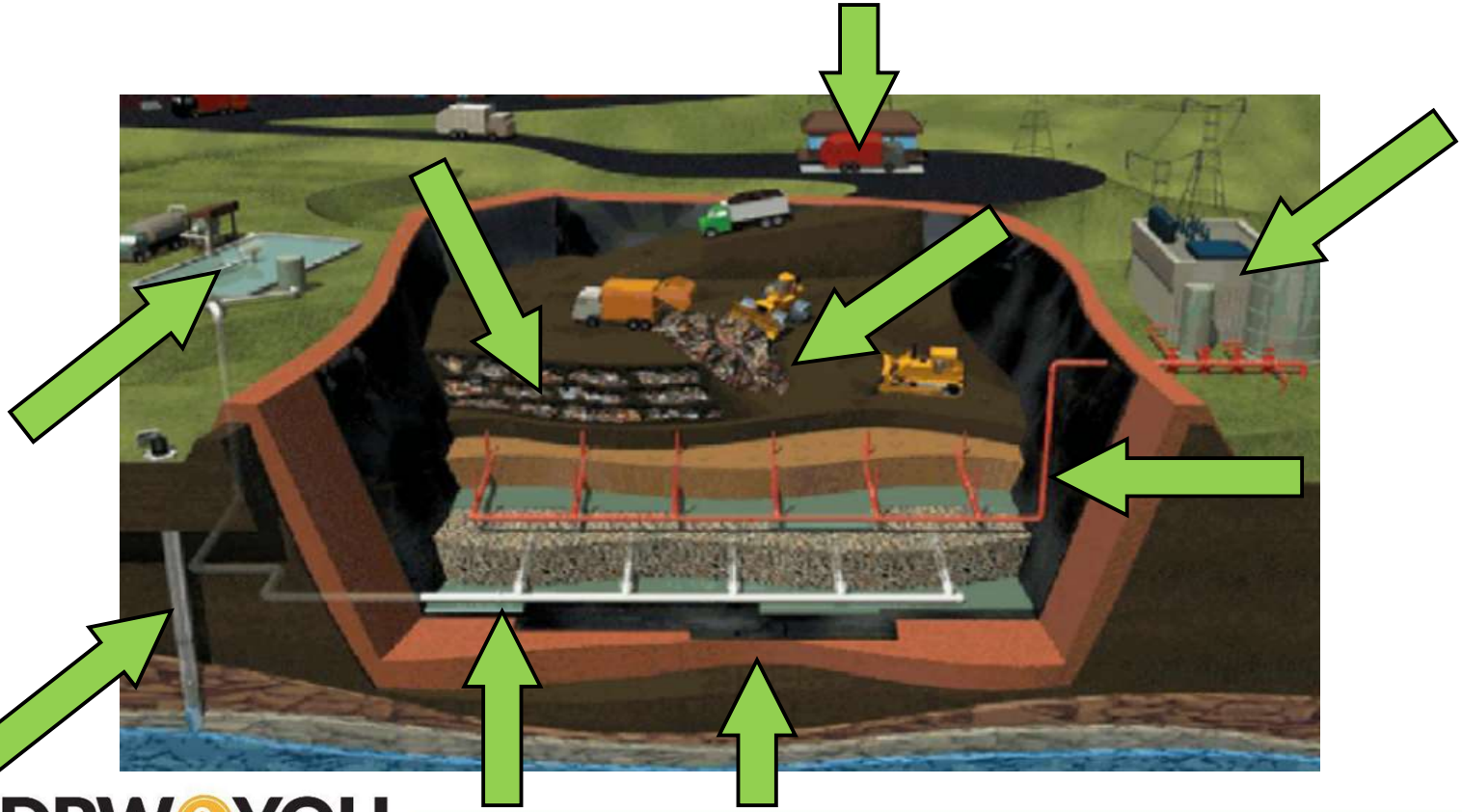
- Cell 9 is the only active cell and last remaining permitted cell
- Cell 9 permitted capacity is 8.5 million cubic yards
- Divided into 5 subcells
- In 2023, 122,800 tons of solid waste (270,000 cy) placed in Cell 9
- Cell 9 expected to run out of capacity in late 2048

Landfilling in Subcell 9.1, construction of Subcell 9.2, 2021

Basis of Design = Environmental Protection

- Landfills are designed and operated to control:
  - Leakage of leachate to soil, groundwater, or surface water
  - Migration of gas to subsurface
  - Emission of gas to the atmosphere
- Leachate is controlled by the landfill liners and leachate collection system
- Gas is controlled by the landfill liner and gas management system
- Cover system serves to minimize leachate generation and gas emissions

Overview of Typical Landfill Operations and Control Systems



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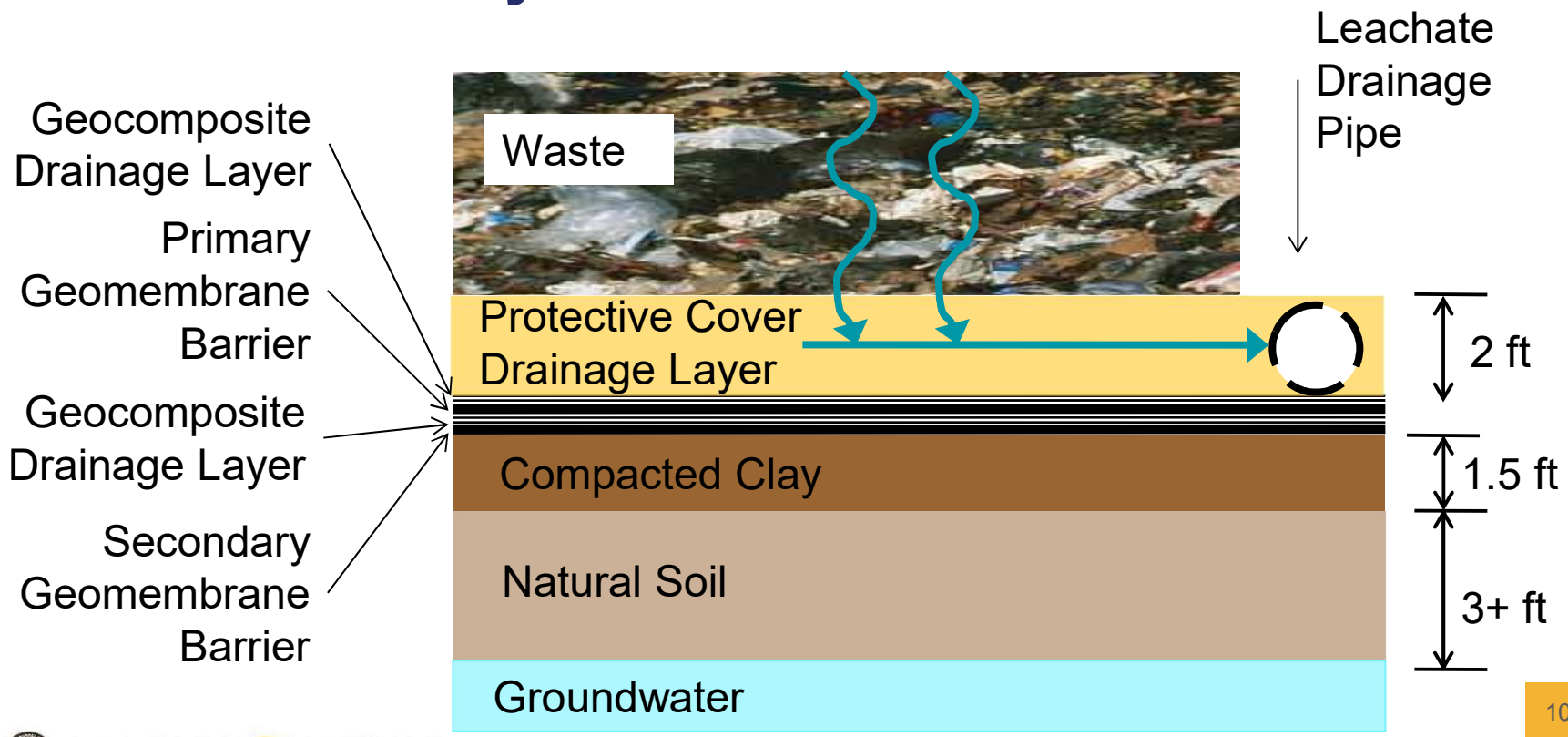
Landfill Liner System



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Liner System Construction Overview

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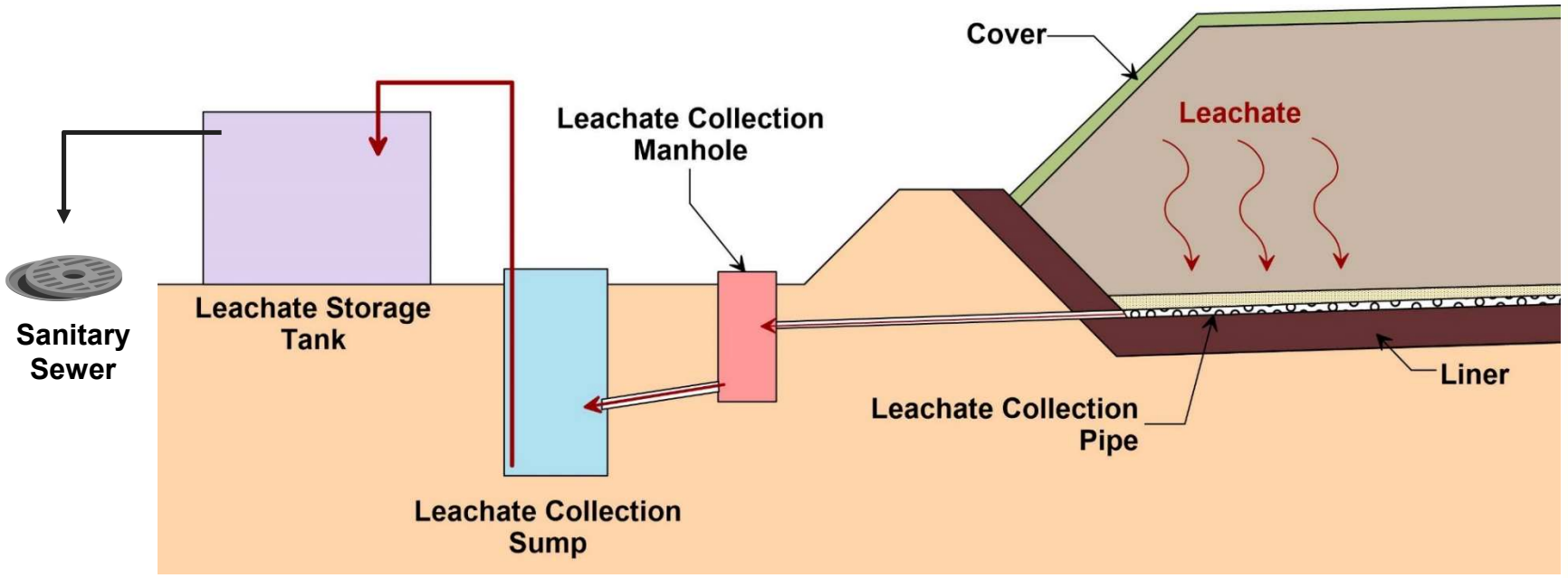
Leachate Management System



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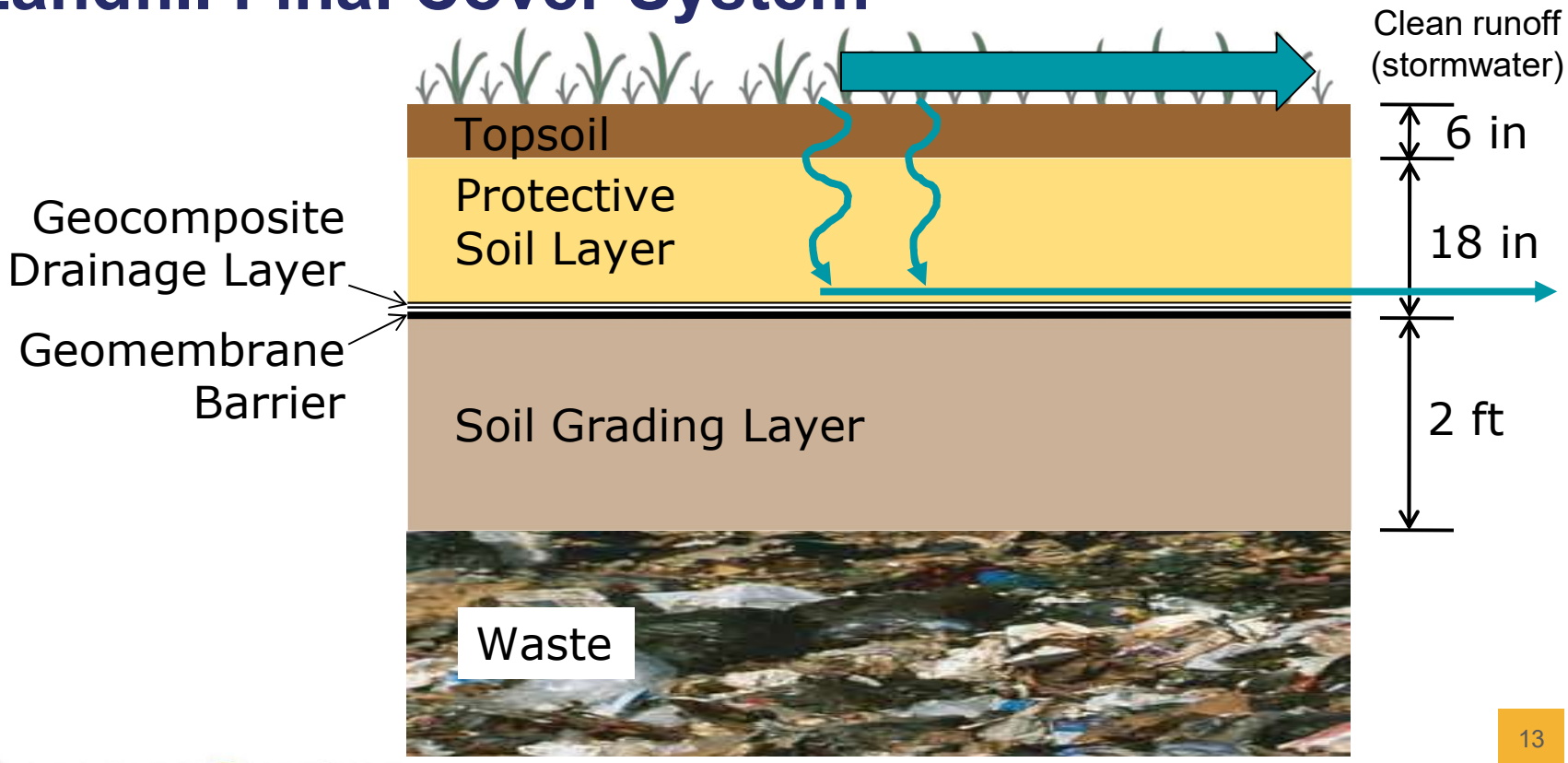
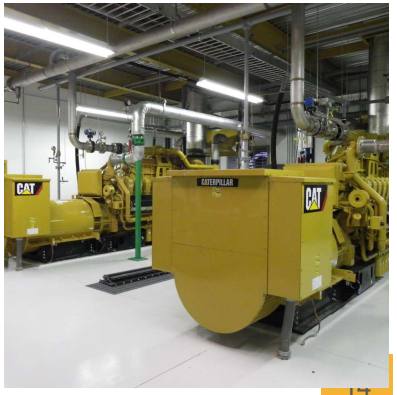
Landfill Final Cover System



Landfill Gas Control

- Helps prevent odors
- Protects air quality
- Helps control greenhouse gas emissions
- Renewable energy production from methane gas

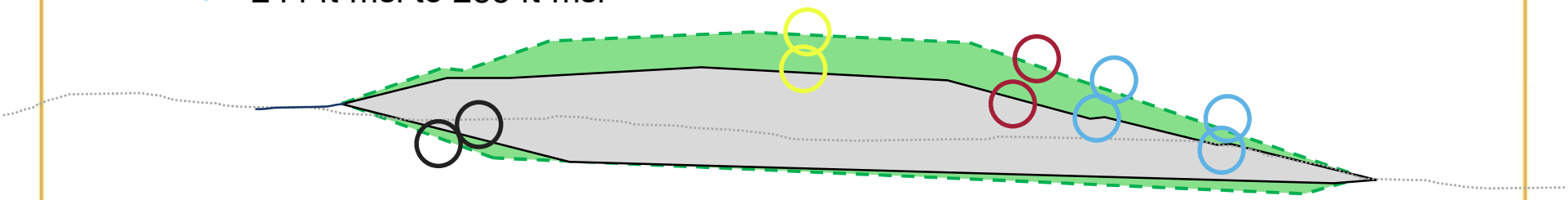


Environmental Monitoring

- Groundwater monitoring well network
- Gas migration monitoring well network
- Surface water monitoring
- Routine monitoring performed
- Reports submitted to MDE

Proposed Vertical Expansion

- Steepen sideslopes
  - 3.5:1 to 3:1
- Stormwater benches
  - Tack on
- Increase vertical height
  - 244 ft-msl to 285 ft-msl
- Steepen interior slopes
  - 4:1 to 3:1
- Alternative Closure Cover
  - Closure Turf
- Extend life to ~2060



~50% increase in capacity; no change to permitted landfill disposal boundary

Evaluation of Cell 9 Expansion Design

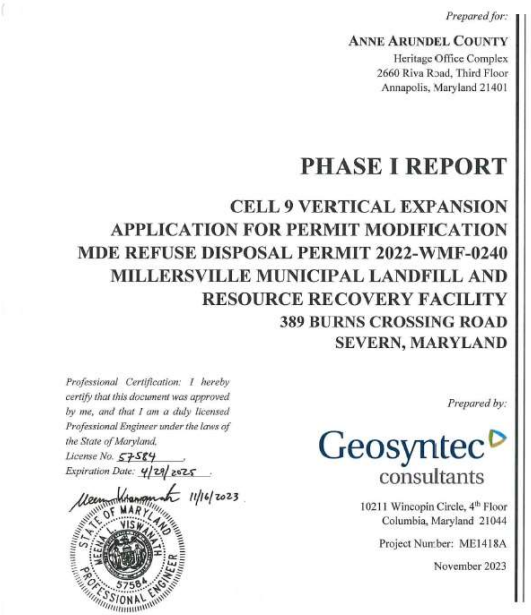
- Liner System
  - ✓ Is the liner strong enough?
  - ✓ Will the ground sink?
  - ✓ Will the landfill be stable?
- Leachate Management System
  - ✓ Are the pipes and tanks big enough?
  - ✓ Are the collection pipes strong enough?
- Landfill Gas Collection System
  - ✓ Do we have enough gas collection wells?
  - ✓ Are the pipes big enough?

Evaluation of Cell 9 Expansion Design

- Final Cover System
  - ✓ Will the landfill be stable?
  - ✓ Is the final cover strong enough?
- Stormwater Management System
  - ✓ Are the ponds big enough to hold all the water?
  - ✓ Will the landfill cover be eroded or damaged?

Closing Summary

- Expansion will provide additional landfill capacity through ~2060
- Environmental quality at the site will be protected
- Permit application available to view:
  - Odenton Branch, Anne Arundel County Public Library
  - Severn Branch, Anne Arundel County Public Library
  - MDE website



Prepared for:

ANNE ARUNDEL COUNTY
Heritage Office Complex
2660 Riva Road, Third Floor
Annapolis, Maryland 21401

PHASE I REPORT

CELL 9 VERTICAL EXPANSION
APPLICATION FOR PERMIT MODIFICATION
MDE REFUSE DISPOSAL PERMIT 2022-WMF-0240
MILLERSVILLE MUNICIPAL LANDFILL AND
RESOURCE RECOVERY FACILITY
389 BURNS CROSSING ROAD
SEVERN, MARYLAND

Professional Certification: I hereby certify that this document was approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland,
License No. 57584
Expiration Date: 4/29/2025
11/14/2023

STATE OF MARYLAND
MELISSA A. VISWANATH
57584
PROFESSIONAL ENGINEER

Prepared by:

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Project Number: ME1418A
November 2023

Questions and Discussion

For more information: https://mde.maryland.gov/programs/land/solidwaste/pages/index.aspx
https://www.aacounty.org/public-works/news/cell-9-volume-enhancements


Millersville Landfill and Resource Recovery Facility (MLFRRF)
Severn, Maryland - Anne Arundel County
Date of Photography: January 02, 2024
Approximate Scale: 1" = 250'
NEW CUT ROAD
DISPOSAL CELL 1 EAST (CLOSED)
COMPOSTING PAD
SWM POND #11
TERRY LEE WAY
DISPOSAL CELL 2 (CLOSED)
SWM POND #1
SWM POND #2
LANDFILL GAS-TO-ELECTRIC PLANT
SWM POND #3
DISPOSAL CELL 5, 6 & 7 (CLOSED)
BLOWER/FLARE STATION
DISPOSAL CELL 4 (CLOSED)
PROPERTY LINE
CONSTANT AVE
GAMBRILLS ROAD
SLEEPY HOLLOW ROAD
SWM POND #4
SWM POND #5
DISPOSAL CELL 8 (Closed in 2018)
SWM POND #5-1
DISPOSAL SUBCELL 9.2
SWM POND #5-2
LEACHATE STORAGE TANK
DISPOSAL SUBCELL 9.1
PAPER RECOVERY FACILITY
ANTRIM DRIVE
SCALE HOUSE
LEACHATE PRETREATMENT PLANT
CENTRAL RECYCLING CENTER
SWM POND #10
BURNS CROSSING ROAD
MAINTENANCE BUILDING
ARABIAN COURT
MUSTANG COURT
DICUS MILL ROAD
WAREHOUSE
DISPOSAL CELL 9 (FUTURE)
ADMINISTRATION BUILDING