

Francis Farm Landfill



Landfill History

- Francis Farm Landfill (FFLF) began accepting waste in 1973 and closed in October 1993.
- County required to maintain closed landfill forever (Post Closure Care).

What's Post Closure Care?

- Landfill gas (methane) monitoring.
- Facility maintenance
 - Stormwater Management
 - Soil Cap (cover over waste)
 - Roads and Access
 - Sediment and Erosion Control
- Groundwater & surface water monitoring

Landfill Problems

- Waste buried very close to property boundaries.
- Methane gas detected above limits at property boundary.
- Soil cap has settled – water infiltrates, makes leachate.
- Groundwater contaminated beneath landfill and off site close to landfill.
- Surface water not affected (clean).

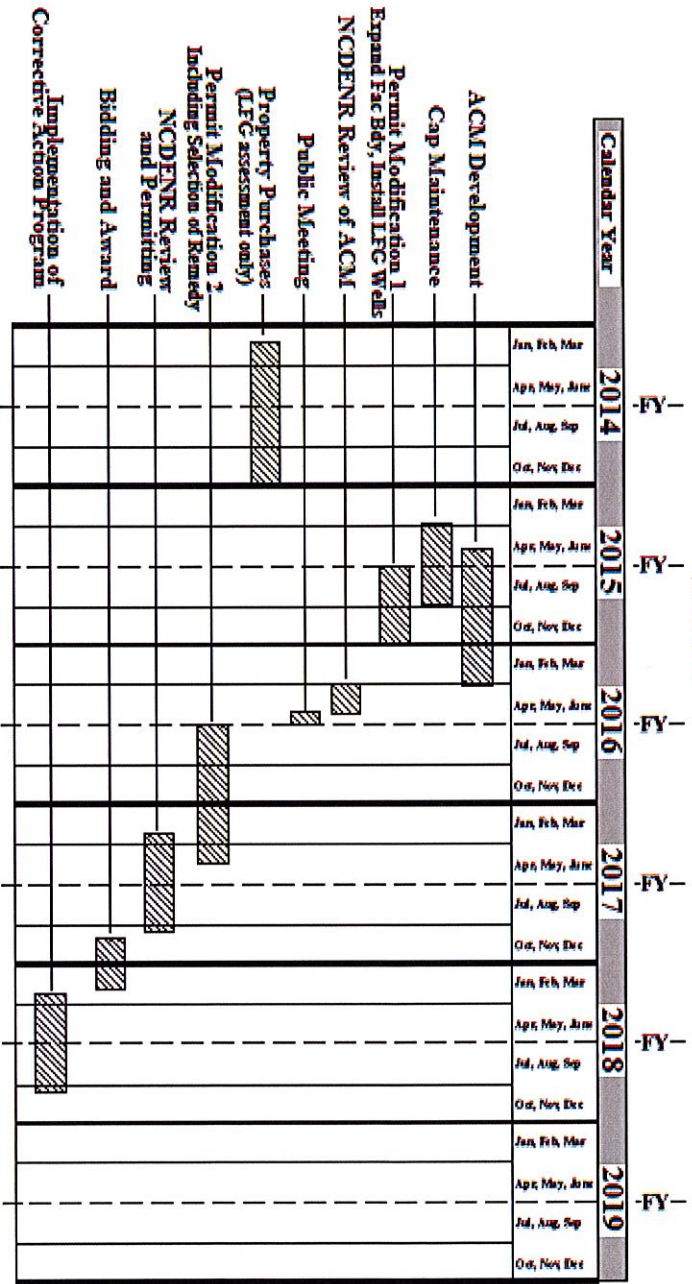
Compliance Issues

- Landfill gas exceeds limits under NCDENR Rules. -- Action Required
- Soil cap needs interim maintenance. – Action Required
- Groundwater exceeds limits under NCDENR Rules. -- Action Required
- Develop a task list and timeline to address compliance issues.

FRANCIS FARM LANDFILL

Conceptual Remedy Items Estimated Timeline

March 2015



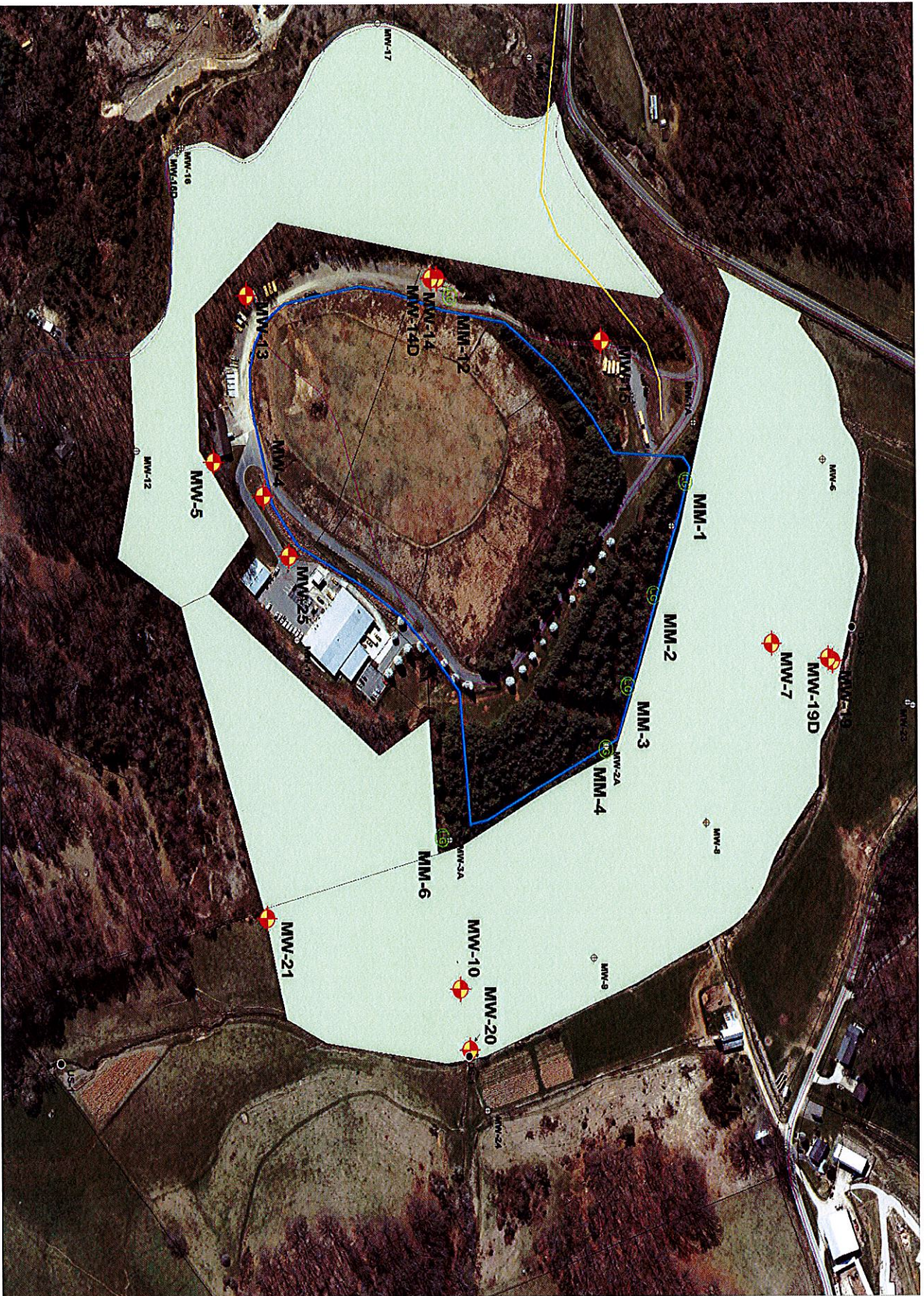
- Landfill Cap Considered in this Evaluation
(from bottom to top)
- Clear and grub existing LF cap. Prepare surface for liner.
 - 40-mil geomembrane liner
 - 8-oz double-sided geocomposite drainage mat
 - 2'-6" vegetative soil layer

Note: The items included in this estimate were developed prior to the ACMF being produced, and are considered to be conceptual only for planning purposes. The timeline shown is approximate only and will be revised as the project evolves and the parameters of the design, permitting, and construction are better understood. At this time, NO project scope has been developed.

Landfill Gas Solutions

- Expand facility boundary by purchase of properties surrounding landfill (complete).
- Submit new landfill gas monitoring plan to NCDENR (pending).
- Install new landfill gas monitoring wells.
- Continue to operate landfill gas recovery system.
- Facility returns to compliance for landfill gas.

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Landfill Soil Cap Solutions

- Stockpile cheap soil (dirt) from nearby DOT roads project (in progress).
- Prepare cap maintenance plan (complete).
- Cap maintenance plan approved by NCDENR (complete).
- Regrade facility to improve surface drainage (in progress).

Got Dirt?

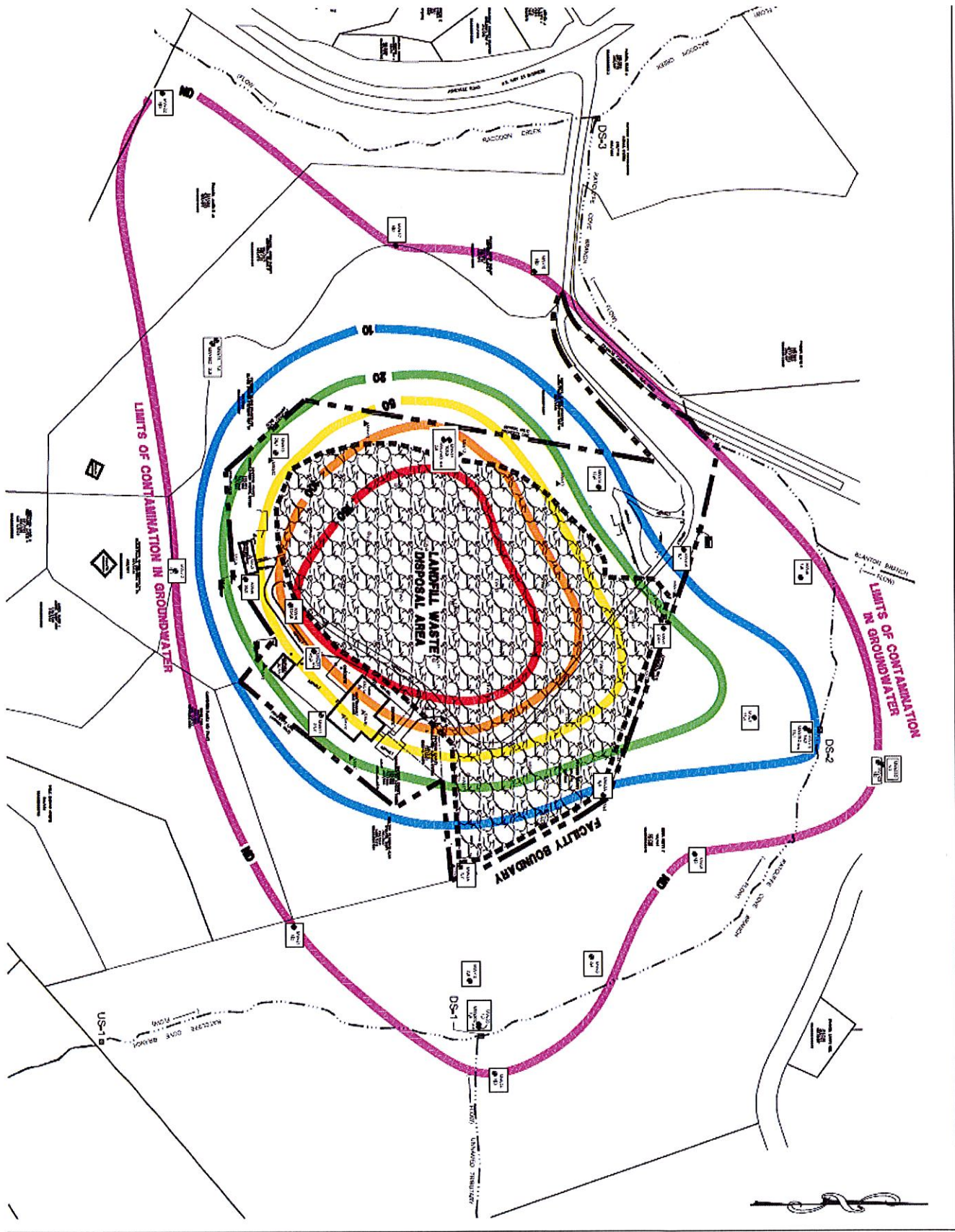
- County has acquired 100,000 cubic yards of dirt for \$300,000 last September.
- Enough dirt to fill a football field 51 feet high
- Enough dirt to fill the Haywood County Courthouse 19 times

And Some More Dirt

- Cap maintenance of 43,000 cubic yards has begun to shed storm water at a cost of \$286,000.
- The first major cap maintenance since FFLF closed.
- This is part of normal required post closure care.

Groundwater Solutions

- Assess extent of groundwater impacts (complete & approved by NCDENR - see map).
- Identify remedies (ACM) [in progress]
- Select a remedy
- Prepare an engineered corrective action plan (CAP)
- Implement corrective action
- Return the facility to compliance



Assessment of Corrective Measures (ACM)

- ACM is an evaluation of many potential remedies for groundwater (in progress).
- NCDENR will review the ACM report
- A public hearing will be held concerning the ACM as per 15 NCAC 13B .1635(d)
- After the Public Hearing, a remedy or remedies will be selected
- A Corrective Action Plan will be prepared and NCDENR will approve
- Implement corrective action

List of Potential ACM Remedies

- Place a engineered soil cap over the waste area
- Add a geomembrane liner to the cap
- Leachate Recovery & Disposal
- Recovery Wells/ Capture Zone/ Pump & Treat
- Phytomediation
- Active Soil Vapor Extraction System
- Bioremediation with Injection Wells
- Passive Reactive Barrier
- Monitored Natural Attenuation

Utilities by Comparison

Average monthly residential electricity bill in North Carolina is \$117 electricitylocal.com

Average monthly residential water and sewer and bill in North Carolina is \$80.25 efc.sog.unc.edu

A study earlier this year found that Verizon was the most expensive carrier, with an average customer bill of \$148 a month. Sprint and AT&T weren't that far behind, and T-Mobile was the least expensive of the Big Four carriers at \$120 CBS Money Watch, December 2014

Solid Waste Fee

- Covers 10 Convenience Centers & MRF with 540 weekly hours of operation
- Waste/Recycling is hauled by third party
- Provides a sanitary landfill and transfer station for further convenience
- Protects Human Health & the Environment
- \$164.00 a year or \$13.66 a month