



Frequently Asked Questions

North Wake Landfill

Q1. Where is the North Wake Landfill located?

The North Wake Landfill is located at 9300 Deponie Drive, off of Durant Road in north Raleigh, between Falls of Neuse Road and Capital Boulevard. It is surrounded by mostly residential neighborhoods, with approximately 16,000 people living within one mile of the landfill.

Q2. How big is the North Wake Landfill?

The North Wake Landfill sits on approximately 219 acres of county owned land. It includes three separate landfills. Each landfill measures 70 acres, 6 acres and 33 acres respectively (see picture 1).

Q3. Is the North Wake Landfill an operating landfill?

No, the North Wake Landfill closed in 2008, and later opened as North Wake Landfill District Park.

Post closure environmental monitoring and landfill gas extraction still occur at the North Wake Landfill. Residents of Wake County can also take their household waste and recyclables to Convenience Center (site 7), North Wake Multi-Material Recycling Facility and North Wake Household Hazardous Waste Facility, all located within the 219 acre property. None of this waste is disposed of on site.

Q.4. How did the North Wake Landfill become a park?

In 2004, the North Wake Landfill Citizens Committee planned how the site would be used after the landfill closed. After the landfill closed in 2008, the park was constructed and opened in July 2010. <http://www.wakegov.com/parks/northwake/Documents/NWLF%20Brochure.pdf>

Q5. What kind of waste was disposed of at the North Wake Landfill during its operation?

The North Wake Landfill was permitted to accept municipal solid waste. Municipal solid waste consists of general household garbage, waste from commercial businesses, waste disposed of at convenience centers and non-hazardous waste from industry, such as construction debris.

Q6. How much waste was disposed of at the North Wake Landfill during its operation?

Approximately 6.5 million tons of municipal solid waste was disposed of at the North Wake Landfills.

Q7. What types of landfill were constructed at the North Wake Landfill and when were they in operation?

- 70 acre lined municipal solid waste landfill operated from 1996-2008
- 6 acre unlined construction and demolition landfill operated from 2000-2003
- 33 acre unlined municipal solid waste landfill operated from 1986-1997

Q8. What is a lined municipal solid waste landfill?

A lined municipal solid waste landfill is an engineered and heavily regulated structure to keep waste separate from the surrounding environment (air, groundwater and surface water). This is accomplished with an impermeable synthetic base liner system, a leachate collection system (refer to Q13 for definition of 'leachate'), a landfill gas collection system, and a storm water conveyance system. The proper construction, operation and maintenance of modern municipal solid waste landfills provide one of the safest and best practical means of waste disposal for Wake County's municipal solid waste stream. For more information on the design of impermeable synthetic base liner systems used in Wake County visit:

<http://www.wakegov.com/recycling/division/swl/Documents/Impermeable%20Synthetic%20Base%20Liner%20System.pdf>

Q9. What is an unlined construction and demolition landfill?

A construction and demolition landfill is permitted to accept non-hazardous construction and demolition waste. Construction and demolition waste is composed mainly of wood, asphalt, drywall, and masonry products. The nature of this waste is relatively inert, meaning it does not undergo any significant physical, chemical or biological change. Inert waste does not adversely affect other matter it comes into contact with, in such a way to cause environmental pollution or harm to public health. As a result the State permits construction debris to be disposed of in a construction and demolition landfill without an impermeable synthetic base liner system.

Q10. What is an unlined municipal solid waste landfill?

All of the landfills constructed at North Wake complied with the design and operation requirements and regulations in place at the time. An unlined municipal solid waste landfill is an older design of landfill constructed prior to 1993 (before the law changed, requiring the installation of base liner systems). An unlined landfill has no impermeable synthetic base liner system and leachate collection system in place. In 1985 a nationwide assessment of landfills conducted by the Environmental Protection Agency revealed that unlined landfills may have an adverse impact on water quality. As a result a law was passed requiring all unlined landfills to close by 1998. The unlined municipal solid waste landfill at North Wake was closed in 1997 and undergoes rigorous environmental monitoring. In the event monitoring results indicate regulatory levels have been exceeded, corrective remedial action is taken promptly to safeguard environmental and public health.

Q11. What measures have been taken to reduce the environmental impact of the unlined municipal solid waste landfill at North Wake?

In order to further protect the environment a synthetic cap was installed over the unlined landfill post closure to protect surface water and ground water quality. A landfill cap includes an impermeable barrier that eliminates the percolation of rainwater into the landfill. This significantly reduces the discharge of landfill leachate into the groundwater and into nearby surface waters. A landfill gas migration control system was also installed in the unlined landfill post closure to protect the environment. Additional ground water monitoring stations have been installed around the unlined landfill to provide early detection of any groundwater contamination before it could pose a risk to the environment or public health.

Q12. Is air quality affected by Municipal Solid Waste Landfills?

All municipal solid waste landfills produce landfill gas, which is comprised of approximately 50% methane and 50% carbon dioxide. Both gases occur naturally in the environment in smaller quantities, but landfills are one of the largest sources of man-made methane emissions. In greater concentrations, such as those produced from municipal solid waste landfills, methane is a volatile and harmful greenhouse gas that must be removed from the landfill. The State requires that any gas generated by a landfill be captured to prevent emission into the environment. Gas collection wells have been inserted into the landfills at North Wake and gas is extracted and used as a fuel source by a nearby company, Mallinckrodt Pharmaceuticals, Inc. The levels of landfill gas at the North Wake Landfill are monitored by environmental engineers on behalf of Wake County's Solid Waste Management Division, as required by the NC Department of Environment and Natural Resources.

Q13. Is ground water quality affected by Municipal Solid Waste Landfills?

Municipal solid waste landfills produce a substance called 'leachate'. Leachate is a liquid waste product produced when rainwater percolates through the waste in a municipal solid waste landfill, and it may contain substances such as, dissolved organic matter, inorganic ions, organic compounds, and heavy metals. The lined municipal solid waste landfill at North Wake is designed with an impermeable synthetic base liner and leachate collection system to prevent the leachate from percolating down into groundwater. Once collected it is then treated by the City of Raleigh's Wastewater Treatment Plant. There are several groundwater monitoring stations surrounding the North Wake Landfill. These are wells that are drilled into the ground so groundwater can be sampled and tested for potential migration of leachate from the landfill. Groundwater monitoring at North Wake Landfill is conducted by environmental engineers on behalf of Wake County's Solid Waste Management Division, as required by the NC Department of Environment and Natural Resources.

Q14. Is surface water quality affected by municipal solid waste landfills?

Landfills are designed with drainage ditches that run along the base of the landfill to capture storm water run-off. The ditches carry run-off to retention ponds, where surface water quality parameters are monitored to ensure regulatory levels are not exceeded. The closed landfills at North Wake are all capped with an impermeable synthetic liner that prevents storm water from coming in contact with the waste in the landfill. The drainage ditches and retention ponds at the North Wake Landfill are no longer required to be monitored by the NC Department of Environment and Natural Resources.

Q15. Where can I find environmental monitoring reports for the North Wake Landfill?

Environmental monitoring reports for the North Wake Landfill are published online by the NC Department of Environment and Natural Resources, Division of Waste Management, Solid Waste Section: <http://portal.ncdenr.org/web/wm/sw> . Systems require Java software to run the reports.

Follow these steps to access the reports:

- Select 'Documents' from the left menu
- Under the heading 'General Criteria' and sub-heading 'Division' select 'Waste Management' from the drop down list
- Under 'Subdivision' select 'Solid Waste' from the drop down list
- Under 'Document Category' choose 'Facility' from the drop down list
- Under 'Doc Group' choose 'Routine Monitoring'
- Under 'Document Type' choose either 'Ground Water', 'Landfill Gas' or 'Surface Water' (depending on the environmental monitoring report sought)
- Under the heading 'Property Criteria' and sub-heading 'Name/Subject' type out 'Wake County Landfill-North' in the box marked 'Value'
- Hit 'Search'

Q16. Is there any risk to public health and safety associated with the North Wake Landfill?

The municipal solid waste landfills at North Wake are required by law to undergo rigorous environmental monitoring for a minimum of 30 years after closure. In the event that monitoring results indicate regulatory levels have been exceeded, corrective remedial action is promptly taken to safeguard environmental and public health. With the required rigorous environmental monitoring there is no risk to public health associated with the municipal solid waste landfills at North Wake and the development of adjacent land.

All existing, new, and planned developments surrounding the North Wake Landfill are or will be connected to the City's drinking water supply system. There are no known developments on groundwater well systems surrounding the North Wake Landfill.

Q17. Who can I contact if I have more questions about the North Wake Landfill?

For additional questions about North Wake Landfill contact Wake County Solid Waste Management Division on 919-856-6424.

