MD-138
Kent County

1964	Refuse Disposal Permit issued to J.L. Nicholson.
1980	Three on-site monitoring wells installed.
1982	DHS reissued.
1984	EPA conducted Site Investigation; elevated levels of phtalates and beryllium detected.
1987	Consent Order CO-87-105 signed.
	MDMH issued order to close landfill.
1988	Groundwater-monitoring network installed on site.
1989	Organic contamination of the shallow aquifer detected.
1992	Facility officially closed.
1992	MDE conducted Site Investigation and recommended no further action under CERCLA.
1999	MDE prepared *Site Survey*; reported the state had further requirements, recommended the site be archived by EPA.

NICHOLSON LANDFILL
Chestertown, Maryland

Site Location

The Nicholson Landfill is located west of Earl Nicholson Road and east of State Route 298 in Chestertown, Kent County, Maryland. The site is approximately 40 acres. The landfill facility makes up approximately 20 acres of the site, and the landfill itself is approximately 7 acres.

The site vicinity is primarily rural and agricultural. South of the site is agricultural land, on the west and north are trees, and on the east is Earl Nicholson Road. The nearest residence is about 500 feet northwest of the landfill. The majority of residents in the area depend upon private wells for potable water. Most of the site drainage is believed to discharge to a small, unnamed perennial stream located approximately 1,000 feet north of the site.

Site History

The Nicholson Landfill site was originally an abandoned, unlined gravel pit 15 to 17 feet deep. In September 1964, a Refuse Disposal Permit was issued to J.L. Nicholson to operate a landfill on his property. The landfill accepted chemical waste from Tenneco Chemicals, Incorporated, drums of unknown waste from Campbell Soup, empty pesticide containers and municipal refuse.

From 1964 to 1983, Tenneco Chemicals, Incorporated used the site to dispose of an estimated 7 million gallons of liquid and 9,000 tons of solid waste. The main waste streams were general refuse, oily liquid tank bottoms, filter cake and chemical sludge. The oily liquid tank bottoms were dumped onto the landfill from drums, and the chemical sludge was delivered to the landfill in 1,000-gallon tank trucks. In 1975, Tenneco estimated their waste stream, in solid-waste quantities, as shown below.

Waste	**Quantity (tons/month)**	**General Composition**
General refuse	15	paper bags with chemical residue
Oily liquid tank bottoms from drums	2	composition unknown
Filter cake	30	40 to 60 % solid filter material, 40 to 60 % organic oily esters[1]
Chemical sludge	15	24% organics[2]; 44% solids; 32% water

In the late 1970s, regulations concerning land disposal of liquids became more stringent. In 1978, Tenneco was ordered to dewater the sludge. Tenneco applied for, and in 1979, received a permit to dump dewatered, semi-solid sludge, but was repeatedly sited for continuing to dump their waste in liquid form. Disposal of waste from Tenneco stopped in 1983 when the U.S. Environmental Protection Agency (EPA) listed phthalate esters as a hazardous substance.

---

1 Elsewhere this material was referred to as liquid plasticizer, which is basically phthalate esters, a compound used in the manufacture of plastics.

2 The sludge, reported by Tenneco to be phthalate and benzoate higher esters and alcohols, was produced in the primary settling tanks of the biological waste disposal system.

An amendment to the Refuse Disposal Permit issued in 1979 resulted in the installation of three monitoring wells at the landfill in 1980. Maryland Refuse Disposal Permit No. 82-14-06-01A was issued on June 1, 1982 and expired on May 31, 1985. The permit was indefinitely extended under the same permit number after the expiration date. In September 1987, the Refuse Disposal Permit was transferred to Kent County.

Mr. Nicholson, the landfill owner and operator, continued to accept municipal and residential waste for Kent County until 1987 when the county assumed ownership of the landfill. Kent County had difficulty finding another landfill location and the Nicholson landfill was not closed until 1992. Following closure, the Nicholson landfill was capped with two feet of soil and an active methane-gas-extraction system was installed. Monitoring wells surround the property. The facility remained open afterwards as a solid waste transfer station to area residents.

Environmental Investigations

The EPA conducted a *Site Investigation* of the Nicholson Landfill in 1984. The analysis indicated some organics leaching from the landfill. The analysis of on-site groundwater samples revealed elevated levels of phthalates (65 ug/1) and beryllium (51 ug/1).

Consent Order CO-87-105, negotiated and signed on June 23, 1987, established guidelines for the operation of the Nicholson Landfill and set a schedule for closure of the facility. The Consent Order gave Kent County the responsibility for determining the extent of ground-water contamination. The Consent Order also listed provisions for assessment of the environmental impacts resulting from operations at the landfill. The provisions included installation of an on-site groundwater-monitoring network with wells representative of the shallow and deep aquifers surrounding the site. The wells were installed by the end of 1988. In 1989, the Maryland Department of the Environment's (MDE) Groundwater Investigations Division began sampling the wells. Analytical results showed organic contamination of the shallow aquifer.

In 1992, MDE's Site Assessment Division conducted a *Site Investigation* of the Nicholson Landfill. MDE collected samples of groundwater, soil, surface water and sediment. Organic contam-ination was detected in the shallow on-site monitoring wells. Of specific concern were the presence of vinyl chloride (17 ug/1), trichloroethene (11 ug/1), benzene (7 ug/1), tetrachloroethene (140 ug/l) and arsenic (25.1 ug/1). Other detected compounds included beryllium (5.8 ug/1) in a nearby residential well, 4-methylphenol (69 ug/l) in a soil sample from a private residence that borders the landfill and diethylphthalate (160 ug/kg) in an on-site soil sample.

MDE completed a *Focused Site Inspection* report on the Nicholson Landfill site in 1992 and recommended No Further Action under the Comprehensive Environmental Restoration, Compensation and Liability Act (CERCLA). MDE's Solid Waste Program continued to monitor the Nicholson Landfill.

In October 1999, MDE prepared a *Site Survey* for the landfill. MDE reported the state had further requirements related to the investigation of hazardous waste at the site, but recommended that the site did not warrant further federal investigation and that it be archived by EPA.

Current Status

This site is on the State Master List that identifies potential hazardous waste sites in Maryland. The Master List includes sites currently identified by EPA's Comprehensive Environmental Response, Compensation and Liability Information System. EPA has given the site a designation of No Further Remedial Action Planned (NFRAP). The designation of NFRAP by EPA does not mean that MDE has reached the same conclusion concerning further investigation at the site. The information contained in the fact sheet presents a summary of past investigations and site conditions currently known to MDE.

Future Activity

The facility continues to be monitored by the MDE's Solid Waste Program.

Facility Contact

Arthur O'Connell, Chief	Site and Brownfields Assessments/State Superfund Division Maryland Department of the Environment	410-537-3493