PRELIMINARY

Health Assessment for

WOODLANDS ROUTE 72 DUMP

WOODLAND TOWNSHIP, BURLINGTON COUNTY, NEW JERSEY

JANUARY 19, 1989

Agency for Toxic Substances and Disease Registry
U.S. Public Health Service

THE ATSDR HEALTH ASSESSMENT: A NOTE OF EXPLANATION

Section 104(i)(7)(A) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, states "...the term 'health assessment' shall include preliminary assessments of potential risks to human health posed by individual sites and facilities, based on such factors as the nature and extent of contamination, the existence of potential pathways of human exposure (including ground or surface water contamination, air emissions, and food chain contamination), the size and potential susceptibility of the community within the likely pathways of exposure, the comparison of expected human exposure levels to the short-term and long-term health effects associated with identified hazardous substances and any available recommended exposure or tolerance limits for such hazardous substances, and the comparison of existing morbidity and mortality data on diseases that may be associated with the observed levels of exposure. The Administrator of ATSDR shall use appropriate data, risk assessments, risk evaluations and studies available from the Administrator of EPA."

In accordance with the CERCLA section cited, ATSDR has conducted this preliminary health assessment on the data in the site summary form. Additional health assessments may be conducted for this site as more information becomes available to ATSDR.

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WOODLANDS ROUTE 72 DUMP
BURLINGTON COUNTY
WOODLAND TOWNSHIP, NEW JERSEY
January 19, 1989

Prepared by:
Office of Health Assessment
Agency for Toxic Substances and Disease Registry (ATSDR)

Background

The Woodlands Route 72 Dump site is listed by the U.S. Environmental Protection Agency (EPA) on the National Priorities List (NPL). The approximately 12-acre site operated during the early 1950s until 1962. Wastes were either buried or burned. One-half mile to the northwest are active commercial cranberry bogs. There apparently has been little waste disposal activity since 1962.

A chain-link fence was installed in 1986. Access to the site may be restricted somewhat by this fence; however, there is evidence of recreational activity (recreational vehicle tracks, hunting), including child-size footprints.

The following documents were provided to ATSDR for review: Draft Final Remedial Investigation Study and Addendum, volumes I and II, December 1987, and June 1988, respectively. These documents form the basis of this preliminary health assessment.

Environmental Contamination and Physical Hazards

The major environmental contamination on-site consists of benzoic acid (64 ppm), dibenzofuran (5.3 ppm), bis(2-ethylhexyl)phthalate (460 ppm), 1,4-dichlorobenzene (3.7 ppm), DDT (1,400 ppm), lead (1,000 ppm), barium (606 ppm), chromium (1,504 ppm), lead (1,532 ppm), nickel (415 ppm), and mercury (2.3 ppm) in surface waste; toluene (5,000 ppm), chloroform (570 ppm), xylenes (2,300 ppm), bis(2-chloroethyl)ether (450 ppm), benzoic acid (400 ppm), di-n-butylphthalate (3,400 ppm), dibenzofuran (700 ppm), benzene (150 ppm), DDT (42 ppm), PCBs (5.5 ppm), phenol (306 ppm), chromium (191 ppm), lead, (2,680 ppm), and selenium (1,122 ppm) in subsurface wastes; bis(2-ethylhexyl)phthalate (420 ppm), PCBs (3.1 ppm), DDT (4 ppm), phenol (17 ppm), benzoic acid (170 ppm), chromium (211 ppm), lead (18,126 ppm), and mercury (0.8 ppm) in surface soil; toluene (360 ppm), chlorobenzene (210 ppm), xylenes (630 ppm), DDT (38 ppm), phenol (18 ppm), ethylbenzene (110 ppm), styrene (560 ppm), naphthalene (10 ppm), benzene (7.3 ppm), dibenzofuran (2.9 ppm), chromium (12 ppm), and lead (247 ppm) in subsurface soil; and toluene (36 ppm), xylenes (3.4 ppm), benzene (0.6 ppm), phenols (624 ppm), methylene chloride (2 ppm), bis(2-chloroethyl)ether (1 ppm), 1,2-dichloroethane (4 ppm), ethylbenzene (2.4 ppm), chromium (0.3 ppm), arsenic (0.03 ppm), manganese (0.6 ppm), cadmium (0.07 ppm), and lead (0.1 ppm) in groundwater.

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The major environmental contamination off-site consists of phenol (18.4 ppm) and lead (0.1 ppm) in surface water and phenol (118 ppm) and lead (42 ppm) in sediment.

There are a number of very soft and potentially dangerous tar pits several feet deep and several feet wide that pose a physical hazard to those who go on-site. In addition, there are two areas identified on-site that have levels of surface gamma radioactivity (thorium-232, 4,500 ± 400 pCi/gm, radium-226, 180 ± 20 pCi/gm, and uranium-238, 260 ± 100 pCi/gm) greater than background (value not reported). The exposure readings at one meter above ground level ranged up to 45.8 uR/hr.

Potential Environmental and Exposure Pathways

The environmental pathways of concern are contaminated groundwater and soil. The Cohansey Aquifer is a high yielding surficial aquifer which is the major source of potable water for the area. The site is in the direct recharge area for this aquifer, and there is no continuous clay layer between the aquifer and the site. The aquifer provides domestic supplies to private wells in surrounding small communities and the few isolated residences. The on-site contamination in surface and subsurface soil provides a reservoir of hazardous substances which will continue to percolate into the groundwater. Surface contamination could provide a surface water, sediment, and atmospheric contamination.

The human exposure pathways of concern are ingestion, dermal absorption, and inhalation (of the volatile components of) of contaminated groundwater, ingestion of and skin contact with contaminated soil, inhalation of chemically contaminated dust particles, and inhalation of and direct contact (exposure) to radioactive soils.

Demographics

There is one residence located adjacent to the site and between the site and Woodlands Route 532 Dump, another NPL site. The population in Woodlands Township is approximately 2,500. The size of the population within a 4-mile radius of the site is approximately 900. Land use in the area is limited to cranberry and blueberry cultivation and harvesting cedar and pine for wood products. The site is located within the Pinelands National Reserve, which was created by the National Parks and Recreation Act of 1978.

Evaluation and Discussion

There is little to no information concerning the quantity of wastes disposed of at this site. Based on the sampling results, there appears to

be a substantial reservoir of hazardous substances on-site. These materials will continue to percolate through the soil and into the groundwater; they may cause degradation of surface water, soil and sediment off-site in the future. At present, surface water, soil, and sediment do not appear to be environmental pathways of concern. This may change, however, depending on the degree of groundwater discharge to the surface. Remedial actions that require disturbance of the wastes and soils may result in an inhalation hazard to workers. The private well located between the site and Woodlands Route 532 NPL site is not contaminated (based on one sampling round). There was no indication that a monitoring program is provided for this well; this may be prudent considering its location relative to the waste sites.

There is visual evidence of human contact with the site. There are some areas of the site where gamma exposure is in excess of the EPA recommended action level of 20 uR/hr above background. The site restrictions in place may not be sufficient to prevent human exposure to hazardous substances.

ATSDR has prepared, or will prepare, Toxicological Profiles on the site contaminants (with the exception of dibenzofuran, DDT, barium, styrene, and manganese) noted above.

Conclusions and Recommendations

Based on the available information, this site is considered to be of potential public health concern because of the risk to human health caused by the possibility of exposure to hazardous substances via contaminated groundwater and soil. Any private wells and public water supplies in a location that could be impacted by groundwater contaminant plumes should be identified and sampled on a periodic basis. Further access restrictions to the site should be studied.

Further environmental characterization and sampling of the site and impacted off-site areas during the Remedial Investigation and Feasibility Study (RI/FS) should be designed to address the environmental and human exposure pathways discussed above. When additional information and data become available, e.g., the completed RI/FS, such material will form the basis for further assessment by ATSDR at a later date.