

# **Lead Initiative Summary Report**

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REICH FARMS

DOVER TOWNSHIP, OCEAN COUNTY, NEW JERSEY

CERCLIS NO. NJD980529713

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

Agency for Toxic Substances and Disease Registry

Division of Health Assessment and Consultation

Atlanta, Georgia 30333

## **Lead Initiative Summary Report: A Note of Explanation**

The purpose of the Lead Initiative Summary Report is to discuss the current status of a hazardous waste site and determine if there is a population potentially at risk from exposure to lead and other hazardous substances from the site. The Lead Initiative Summary Report is generally reserved to update activities for those sites for which public health assessments have been previously prepared and where lead contamination has been documented. It is not intended to be an addendum to a public health assessment. The goal is the prevention of lead toxicity in the population potentially exposed to lead released from NPL sites by initiating appropriate follow-up activities. The Lead Initiative Summary Report, in conjunction with the ATSDR Site Ranking Scheme, will be used to determine relative priorities for future ATSDR public health actions.

**LEAD INITIATIVE SUMMARY REPORT**

**REICH FARMS**

**DOVER TOWNSHIP, OCEAN COUNTY, NEW JERSEY**

**CERCLIS NO. NJD980529713**

**Prepared by**

**Remedial Programs Branch  
Division of Health Assessment and Consultation  
Agency for Toxic Substances and Disease Registry**

## **SUMMARY OF BACKGROUND AND HISTORY**

The Reich Farm Superfund Site (also known as Union Carbide Chemical and Plastics Company, Inc.) is in the city of Pleasant Plains, Ocean County, New Jersey. The site is situated about 500 feet east of New Jersey Highway Route 9, one mile northeast of the Toms River and 1,000 feet from an intermittent stream draining into the Toms River. The site encompasses approximately three acres of land which are in a relatively open, flat sandy surface surrounded by wooded areas to the north and east (Figure 1). The entire study area, including the site, includes about fifteen acres of land. At the time the 1989 ATSDR health assessment was written, access to the site was unrestricted.

According to the health assessment, the site was used illegally from August to December 1971, for the disposal of drums containing organic solvents, still bottoms, and residues from the manufacturing of organic chemicals, plastics, and resins. The site had been leased from the Reich Farm owners by an independent waste hauler. In December 1971, the owner discovered approximately 4500 drums containing chemical wastes and 450 empty drums, as well as trenches in which chemical wastes had been discharged. The owner of the property notified the New Jersey Department of Environmental Protection (NJDEP) and the responsible chemical manufacturer (identified by the labels on the drums).

In February 1972, Union Carbide removed approximately 5096 drums from the property. All visible drums and trench wastes were removed and it was believed that the property was free of all chemical wastes. However, by 1974 residential wells in the vicinity of the site were found to contain various organic contaminants.

On the basis of the residential well water sampling results obtained in 1974, the State Bureau of Potable Water ordered Dover Township to prohibit groundwater use for drinking from 148 wells in the vicinity of the site.

The contaminants of concern in the groundwater are tetrachloroethylene (PCE), trichloroethylene (TCE), trichloroethane (TCA), and bis-(2-ethylhexyl) phthalate (BEHP).

In addition, lead was detected downgradient off-site and in seven of 16 municipal and residential wells sampled for inorganic contaminants (levels in the seven wells ranged from 8.4 to 58 ppb). The concentrations of lead in these wells exceeded EPA's proposed Maximum Contaminant Level (PMCL) of 5 ppb for drinking water. Elevated levels of lead

were also found in one or more samples of subsurface soils, at concentrations ranging from 3 to 61 ppm.

On September 16, 1974, the Township of Dover ordered a number of wells in the vicinity of the site closed and sealed. A zone system restricting ground water usage was established. Zone I included an area of closed wells, within which all new wells were prohibited. Temporary alternate water supplies were provided until all residences within Zone I were placed on municipal water provided by the Toms River Water Company (TRWC). Zone II included an area within which no wells were permitted in the upper sand aquifer.

In April 1976, organic chemical contamination was found in 13 private wells located in Zone II south of the site. From 1974 to 1976, 161 wells, both upgradient and downgradient of the site, were condemned. Temporary alternate water supplies were provided until all residences within the affected area were placed on municipal water provided by TRWC. Monitoring wells were installed by TRWC to check contaminant movement towards the deep aquifer and municipal wells. Annual sampling of those wells occurred between 1976 and 1980.

Tables 1 and 2, taken from the 1989 ATSDR health assessment, list the contaminants of concern on and off-site. As indicated, lead was detected in on-site subsurface soils at a maximum concentration of 61,000 ppb. Lead was detected off-site, in private or municipal wells, at a maximum concentration of 58 ppb. In addition, lead was detected in monitoring wells in the upper and lower aquifer at concentrations of 56 and 33 ppb, respectively.

A Record of Decision (ROD) was signed on September 30, 1988. Planned remediation, as outlined in the ROD, included the following.

- Additional ground water sampling to further delineate the leading edge of the contaminant plume and to support existing data on the contaminants of concern at the site.
- Extraction of contaminated ground water through pumping followed by on-site treatment and reinjection of the treated effluent into the ground.
- Excavation and treatment of contaminated soil to meet the New Jersey Soil Cleanup Guidelines. A soil which cannot be treated to meet these guidelines by enhanced volatilization will be taken off-site for incineration and disposal.

## **RECENT SITE VISIT**

On March 24, 1993 representatives from ATSDR and NJDEPE conducted a site visit at Reich Farms. The only indication at the site that the area is a hazardous waste site is the presence of a fenced decontamination pad containing numerous drums.

## **PUBLIC HEALTH ISSUES**

The Ocean County Health Department representative indicated that the public has not expressed any health concerns about the Reich Farm site for several years. Past community health concerns at the site related to providing public water to affected or potentially affected residents with private wells.

The only apparent exposure route related to the site appears to be past exposure to site contaminants through the ingestion of private well water. No current exposures are apparent. Although the 1989 ATSDR health assessment indicated that lead was present in water from private or municipal wells, lead does not appear to be a major site-related contaminant. The lead detected in the private or municipal wells may not be site-related. The main contaminants at the site are VOCs in groundwater. The site was first identified by the presence of VOC's in 3 to 8 private wells. Because of this contamination, about 145 wells were closed and residents were placed on public water, mostly as a precautionary measure.

According to NJDEPE representatives, water from the Toms River Water Company Well #26 has been contaminated; however, this well water is being treated by an air stripper. In addition, NJDEPE indicated that the only well in operation with no treatment device is used for irrigation. Although lead and other contaminants were detected in the municipal drinking water supplies, the blended water from TRWC is monitored and meets the NJDEP Maximum Contaminant Levels (MCLs).

Contaminated soils on site have either been removed, or covered with a clean layer of soil.

## **CURRENT DOCUMENTS**

Documents available for review include the ATSDR health assessment dated April 20, 1989; the Draft Original Remedial Investigation Report (dated September 1986) and the Draft Supplemental Remedial Investigation Report (dated August 1988); the Draft Feasibility Study Report dated June 1988; the Draft Record of Decision dated September 1988, and the Draft Remedial Design/Remedial Action dated January 1992.

## **CONCLUSIONS/RECOMMENDATIONS FOR LEAD AND OTHER CONTAMINANTS**

There is no apparent site-related lead hazard at the site; however, the source of lead in the private water supplies needs to be investigated. This lead may have resulted from the acidic groundwater in the area interacting with lead-containing components in the household plumbing system. In the past, lead-tin solder was commonly used to join household water pipes. The lead can leach out from the soldered joints by corrosive or acidic waters.

All wastes have been removed and the contaminated soils have been covered with clean fill.

ATSDR recommends a health consultation to review past exposure to volatile organic compounds.

### **HARP Determinations**

The data and information contained in the above document has been evaluated by the ATSDR Health Activities Recommendation Panel (HARP) for appropriate public health actions. HARP has determined that the following actions are indicated. The County Health Director should be contacted to assure that the public water system is regularly monitored to prevent lead contamination. In addition, a health consultation is recommended to review past environmental data and current tap water monitoring data to determine whether exposure to contaminants occurred or are occurring at levels of public health concern. If information becomes available in the future which indicates that human exposure to lead or other contaminants is occurring at levels of public health concern, ATSDR will reevaluate this site for any additional indicated follow-up.

### **Public Health Action Plan**

To respond to any community concerns, and based on the HARP determinations, ATSDR has developed the following Public Health Action Plan:

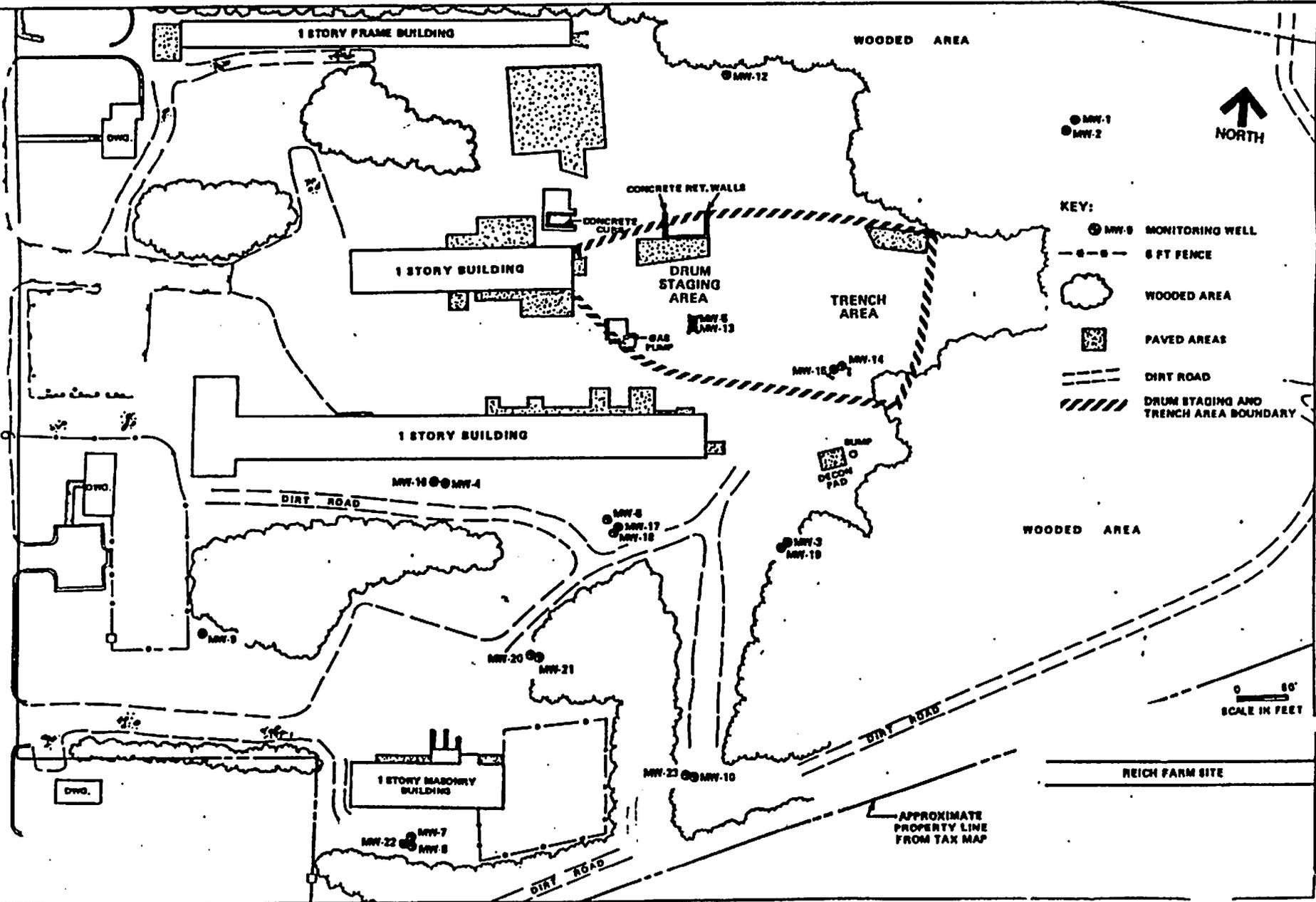
- 1) ATSDR will contact the County Health Director to assure that the public water system is regularly monitored to prevent lead contamination.
- 2) ATSDR will prepare a health consultation to review past environmental data and current tap water monitoring data.

Lead Initiative personnel will monitor the effectiveness of the HARP determinations through continued involvement with site activities. Contact will be made on a quarterly basis with ATSDR regional personnel, DHAC staff, and cooperative agreement state personnel until the recommended public health actions have been implemented. Lead Initiative personnel will also monitor the recent activities at this site.

Lead Initiative Summary Report Prepared By:

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  - MW-21
  - MW-22
- MONITORING WELL  
 - - - 6 FT FENCE  
 [Cloud Symbol] WOODED AREA  
 [Square with Dots Symbol] PAVED AREAS  
 - - - DIRT ROAD  
 [Hatched Line Symbol] DRUM STAGING AND TRENCH AREA BOUNDARY



REICH FARM SITE

APPROXIMATE  
PROPERTY LINE  
FROM TAX MAP

Reich Farm NPL Site Monitoring Well Map

TABLE I. CONTAMINANTS OF CONCERN -- ON-SITE

	Maximum Contaminant Concentrations	
	SUBSURFACE SOILS <sup>a</sup> (ug/kg or ppb)	GROUND WATER <sup>b</sup> (ug/L or ppb)
<u>Organic Compounds</u>		
Bis(2-ethylhexyl)phthalate (BEHP)	742,064	ND <sup>c</sup>
N-Nitrosodiphenylamine	83	ND
Tetrachloroethene (PCE)	13,907	7
Trichloroethene (TCE)	1	9
<u>Inorganic Compounds</u>		
Aluminum	4,960,000	799
Cadmium	2,400	ND
Chromium (total)	46,000	98
Lead	61,000	ND

- a Data for surface soils not shown. The surface soils which were backfilled in 1974 did not contain appreciable levels of contamination when sampled in 1986.
- b Data for organic compounds are from monitoring wells 5, 13, 14 and 15 which sampled in the upper aquifer. Data for inorganic compounds are based only on samples taken from monitoring well #5 since other on-site wells were not sampled for inorganic chemicals.
- c ND = Not detected

TABLE 2. CONTAMINANTS OF CONCERN -- OFF-SITE

CONTAMINANTS	Maximum Contaminant Concentrations		
	PRIVATE/MUNICIPAL WELLS <sup>a</sup>	GROUND WATER MONITORING WELLS <sup>b</sup>	
			UPPER
	(ug/L or ppb)	(ug/L or ppb)	
<u>Organic Compounds</u>			
Bis(2-ethylhexyl)phthalate (BEHP)	ND <sup>c</sup>	29	28
N-Nitrosodiphenylamine	8 <sup>d</sup>	6 <sup>d</sup>	ND
Tetrachloroethene (PCE)	5	19	ND
Trichloroethene (TCE)	14	15	ND
<u>Inorganic Compounds</u>			
Aluminum	783	2620 <sup>e</sup>	7
Cadmium	273 <sup>d</sup>	6 <sup>e</sup>	ND
Chromium (total)	ND	615	ND
Lead	58	56 <sup>e</sup>	33 <sup>d</sup>

- a Eighteen municipal and residential wells in Zone II were sampled for organic and inorganic contaminants. Data for residential well #3 are not included in Table 2. because of probable non-site-related contamination during sampling. The latter is discussed further in the text.
- b Twenty wells were monitored off-site for organic compounds. Of these, monitoring wells 1, 7, 18 and 23 monitored the lower aquifer. Monitoring wells 12-23 were not monitored for inorganic compounds.
- c ND = Not detected
- d Contaminant estimated or detected in only one sample or in only one well.
- e Found in highest concentration in a Toms River Water Company (TRWC) monitoring well, specifically, TRWC-MWD.