

# Health Assessment for

PIJAK FARM

PLUMSTED TOWNSHIP, NEW JERSEY

OCTOBER 3, 1988

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

## SUMMARY

The Pijak Farm Site is a National Priorities List site located approximately 2 miles northeast of the Town of New Egypt, in Plumsted Township, Ocean County, New Jersey. Certain areas of the farm served as disposal sites for a variety of industrial and domestic wastes. Industrial wastes, allegedly from Thiokol Corporation, were dumped into a natural ditch along the edge of a field and covered with soil. In addition, dumping took place in several areas adjacent to wooded and low-lying areas. The wastes were dumped as free-flowing liquids or in 55-gallon drums and laboratory packs. There was some evidence of the burning of wastes and some fiber drums being used as waste containers. The soil contaminants on-site included metals, phenolics, solvents, and polychlorinated biphenyl compounds (PCB's). There were detectable quantities of base extractable compounds in only 2 of the 11 groundwater monitoring wells. The surface water (stream and wetlands area) is primarily supplied by groundwater discharge and appeared to be minimally affected by the site. The Record of Decision (ROD) adequately addresses the public health concerns of this site. However, at two area residences, mercury was detected in the water supply above the New Jersey drinking water standard. Although the contamination is apparently not site-related, these wells should be reevaluated and if mercury contamination is confirmed, then actions to remove it should be developed and implemented.

## BACKGROUND

### A. SITE DESCRIPTION

The Pijak Farm Site, located near New Egypt, Ocean County, New Jersey, is approximately 87 acres in size. There are approximately 40 acres of woods and lowlands, and about 47 acres of still active fields. It was determined that some of the disposal areas were within the 100-year flood plain. From 1962 to the early or mid-1970's, wastes were disposed of in the wooded and low-lying areas around a field. Various wastes were dumped in the natural ravine or on the surface in the woods along the edge of the field. The wastes that were dumped into the ravine were covered with soil. In other areas, some of the remaining drums, both buried and on the surface, were intact while others appeared to have been opened prior to dumping. Other drums were rusted enough to allow their contents to leak out. One of the test pits dug during the Remedial Investigation indicated some of the wastes had been burned.

### B. SITE VISIT

ATSDR has not conducted a site visit at this time.

## ENVIRONMENTAL CONTAMINATION AND PHYSICAL HAZARDS

### A. ON-SITE CONTAMINATION

Approximately 114 55-gallon drums were estimated to be on-site with 27 still intact and containing some wastes. Laboratory packs numbered less than 400 and ranged from 1 pint to 5 gallons in size. There were 10 samples taken from 7 test pits dug in suspected burial areas. The results of the soils analyses indicated different compounds for each area. Most of the identification of the contaminants was made through computer library searches using tentative mass spectrometry data. The majority of the organic compounds identified were not priority pollutants. The concentrations of organic priority pollutants detected were low, ranging from a few micrograms per kilogram to a few milligrams per kilogram. The concentration of the PCB Aroclor 1254 in the soil was 2.3 mg/kg and (2-ethylhexyl) phthalate was 1.4 mg/kg. Later sampling results indicated PCB concentrations ranging 1.0 mg/kg to 160 mg/kg (higher concentrations reportedly in "stockpiles" areas). Low concentrations of lead and nickel were also reported, 3.6 mg/kg and 2.8 mg/kg, respectively. These metal concentrations are well below the typical background soil concentrations for the eastern United States. There were high concentrations of xylenes, long chain organic acids, and thio compounds. These compounds were generally found in only one location on-site, test pit #2. The concentrations of contaminants inside the intact drums were higher; however, the reviewed documents indicated the contaminants will be removed from the site and disposed of properly.

Sediment and stream sampling yielded similar results as the test pits with the exception that the number of compounds found were fewer and their concentrations were lower. Ethylbenzene, DDT and its daughter products were the only priority pollutants detected. DDT and daughter products concentrations were in the 10 ug/kg range.

Groundwater sampling of the 11 new monitoring wells indicated no contamination by volatile organic compounds, acid extractable organic compounds, pesticides, or PCB's. Two wells had detectable quantities of contaminants, MW-2S and MW-5D. Monitoring well MW-5D only had one contaminant, 13 ug/l of 3,7,11-trimethyl-(Z,E)-2,6,10-dodecatriene-1-ol. Monitoring well MW-2S contained substituted benzenes and phthalates in concentrations averaging 1000 ug/l. This monitoring well, in the vicinity of Test Pit 2 had the most contamination.

There was also food chain sampling. On several occasions, crops in the more heavily contaminated areas were sampled and analyzed for contamination. All results indicated there were no contaminants detected.

In addition to the chemical wastes located in various areas around the site, there was also domestic refuse dumped around the abandoned, on-site farmhouse.

It was reported that in 1985, surface drums and the visibly contaminated soils and other wastes were removed from the site.

#### B. OFF-SITE CONTAMINATION

Six off-site potable water samples were analyzed. The only compounds detected were zinc and mercury. The mercury concentration, similar to concentrations found in on-site groundwater, all of which were an order of magnitude less than the Environmental Protection Agency (EPA) drinking water Maximum Contaminant Level and New Jersey's drinking water standard. However, 2 residential wells, the Braumstein and the Blizcz, had mercury concentrations of 0.009 mg/l and 0.005 mg/l, respectively. These concentrations exceed the drinking water standard for mercury. These wells are upgradient of the site and are therefore not believed that the site is the source of the contamination. The concentrations of zinc found in the wells were not of public health concern.

#### C. PHYSICAL HAZARDS

The physical hazards on-site are the abandoned farmhouse and associated domestic refuse. The available information did not indicate whether or not access to the site was restricted.

#### DEMOGRAPHICS OF POPULATION NEAR THE SITE

The site is located in a rural area approximately 2 miles northeast of the Town of New Egypt. Land use in the area is generally agricultural with low density residential development. There are several farmhouses within one-half mile of the site and slightly farther away is a mobile home park and a church. New Egypt, population approximately 2,100 (1980 census), is commercialized and provides the basic community services. The municipal drinking water wells are located approximately 2 miles from the site and are about 250 feet deep. The nearest potable water well is greater than 750 feet from the site.

## EVALUATION

### A. SITE CHARACTERIZATION

#### 1. Environmental Media

The site appears to have been adequately characterized through soil, groundwater, surface water, sediment, and food chain sampling. No further information is deemed necessary, at this time.

#### 2. Land Use and Demographics

No further demographic information is necessary.

#### 3. Quality Assurance and Quality Control

It was assumed that the analytical data has been reviewed by the EPA and has met their acceptability criteria. The conclusions in this Health Assessment were based on the information received. The accuracy of these conclusions is determined by the completeness and reliability of that information.

### B. ENVIRONMENTAL PATHWAYS

The surface soils in areas where the dumping occurred and the subsurface soils in the ravine area are the environmental areas of concern. Migration of contaminants can occur through groundwater transport, erosion by rain or flood, and in some instances, wind erosion. The groundwater is contaminated only in the area near the ravine. The groundwater discharges to the stream and thereby contributes to sediment and surface water contamination. In general, the type of contaminants detected were the phthalate compounds and variously substituted aromatic compounds. The compounds adhere to soil particles, have low solubilities in water and therefore, are relatively immobile under normal conditions.

The crops grown on the farm were analyzed for uptake of contaminants. The results indicated that no contamination was detected.

### C. HUMAN EXPOSURE PATHWAYS

Exposure can occur through dermal contact with and/or inadvertent ingestion and inhalation of surface soils, surface water, and sediments. The population of concern is the remedial workers. For the remedial workers, safety training and proper use of personal protective equipment should eliminate exposure to the contaminants. For the farmers who still work the farm, potential for contact with the heavily contaminated areas is considered to be minimal.

## PUBLIC HEALTH IMPLICATIONS

The concentrations of contaminants found in the soils were generally low (except as stock piled areas). However, the concentration of PCB's found in the on-site soil piles were of health concern. At higher concentrations, short-term exposure to PCB compounds may result in

acneform eruptions of the skin and impaired liver function. PCB's have also been found to be mutagenic and are considered probable human carcinogens. However, as was previously indicated, implementation of proper protective measures and adherence to appropriate work-related standards and regulations should minimize the probability of potential health concerns for remedial workers.

Mercury was detected above the drinking water standards in 2 residential wells close to the site. Although the mercury contamination may not be site related, it does present a health concern for those residents using the water.

The concentration of the other contaminants on-site were generally low and are of minimal health concern.

#### CONCLUSIONS AND RECOMMENDATIONS

Based on the information reviewed, ATSDR has concluded that this site is of potential public health concern because of the potential risk to human health resulting from the possible exposure to hazardous substances at concentrations that may result in adverse health effects. As noted in the Sections on Environmental and Human Pathways above, there are no significant human exposure pathways evident.

The ROD adequately addresses potential human health concerns by establishing the removal of all drums, excavation of the more contaminated soils, and maintaining a groundwater monitoring program.

The recommendations are as follows:

1. Provide proper safety training and protective equipment to remedial workers.
2. Resample and evaluate the residential wells in the area which had mercury contamination in concentrations above the drinking water standard.
3. In accordance with the Comprehensive Environmental Response, Compensation, and Liability Act as amended, the Pijak Farm site has been evaluated for appropriate follow-up with respect to health effects studies. Inasmuch as there is no extant documentation or indication in the information or data reviewed for this Health Assessment that exposure to groundwater contaminants is currently occurring or has occurred in the past, this site is not being considered for follow-up health studies at this time. However, if data become available suggesting that human exposure to significant levels of hazardous substances is currently occurring or has occurred in the past, ATSDR will reevaluate this site for any indicated follow-up.

#### PREPARER OF REPORT

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#### REFERENCES

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3. Draft, Detailed Evaluation of Alternatives, Elson T. Killian Associates, Inc., July 1984.
4. Record of Decision -- Remedial Alternative Selection, EPA Region II, September 1984.
5. Report on Sampling and Analytical Data, International Technology Corporation, March 1986.