Health Consultation

UNION MECHLING COMPANY

SENECA, GRUNDY COUNTY, ILLINOIS

EPA FACILITY ID: ILD984775460

FEBRUARY 23, 2005

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

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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HEALTH CONSULTATION

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Prepared by:

Illinois Department of Public Health
Under Cooperative Agreement with the
U.S. Department of Health and Human Services
Agency for Toxic Substances and Disease Registry

Purpose

In December 1997, the Agency for Toxic Substances and Disease Registry (ATSDR) released a health consultation prepared by the Illinois Department of Public Health (IDPH) for the Union Mechling Company site (also known as National Marine). This health consultation provides an update on activities at the Union Mechling site since the release of the 1997 health consultation. IDPH reviewed data on soil sampling, groundwater monitoring wells and information about subsequent site remediation activities to evaluate whether volatile organic chemicals, semivolatile organic chemicals, pesticides, polychlorinated biphenyls (PCBs), or inorganic chemicals exist at the site at levels that pose a public health hazard.

Background and Statement of Issues

Site History

The Union Mechling site is located south of Old Stage Road along the north side of the Illinois River, immediately outside the city limits of Seneca, Illinois, in west Grundy County (Attachment 1). Since 1941, various tenants have owned and operated industrial facilities at the site that have contributed to petroleum waste, pesticide waste, and lead contaminated soil.

The approximately 66-acre irregularly shaped property was composed of the following sections:

1. Prairie States section
2. Chicago Bridge and Iron (CBI) Company section
3. Open Field section, located immediately north of the Prairie States section, and
4. Woodland section, located north of the CBI section

An intermittent stream ran across the site to the Illinois River and provided drainage for surface water runoff. Only the Prairie States and CBI sections had environmental issues.

The 12-acre Prairie States section was separated into an elevated upland area and a low-lying lagoon area. The upland area formerly contained four abandoned buildings that housed various manufacturing operations. In addition, aboveground storage tanks were located in the upland area. The lagoon area historically contained four separate lagoons. These lagoons may have contained sludge-like material in the past.

The approximately 15-acre CBI section previously housed barge-building operations. This section was also separated into an upland area and a low-lying area by the same ridge that ran across the Prairie States section. The CBI section included production rails and mooring piers located along the shoreline.

The 1997 health consultation determined on the basis of limited information that site-related conditions presented a potential health hazard to trespassers who came in contact with contaminated soil.

Migration of site contaminants to groundwater was also determined to be a potential hazard. The 1997 health consultation recommended the following:

- prevent public access to the site,
- install groundwater monitoring wells to determine contaminant presence and direction and rate of aquifer flow,
- continue testing of private wells near the site, and
- continue to advise users of private wells with elevated thallium levels to use an alternative source of water for drinking and cooking [1].

In 1999, soil was remediated to remove petroleum hydrocarbons and lead after elevated levels of both were identified in the lagoon area of the Prairie States Area and after elevated levels of lead were found in several locations in the CBI area. A total of 1,482 tons of contaminated soil was excavated and removed from the lagoon area, and a total of 2,192 tons of contaminated soil was excavated and removed from the CBI locations. Removal of contaminated soil was undertaken to meet the Illinois Environmental Protection Agency (Illinois EPA) Tier 1 Industrial/Commercial Soil Remediation Objectives. Excavated areas were graded, and the lagoon area was covered with a clay cap [2].

Additional site remediation was conducted in 2001 to remove about 2,088 tons of pesticide-contaminated soil from the Prairie States area. Following discussions with Illinois EPA, the Louisiana Dock Company chose to remediate the site to meet Illinois EPA Tier 1 Industrial/Commercial Objectives instead of using pathway exclusion provisions and engineered barriers [3].

In May 2001, Illinois EPA sent a comprehensive "no further remediation" (NFR) letter to Mr. Barry Dyer of the Louisiana Dock Company. The letter is considered to be evidence that the site no longer constitutes a threat to human health and the environment. Further remediation under the Illinois Environmental Protection Act is not required as long as use of the site is restricted to the following limitations:

- The site is restricted to industrial or commercial land use.
- A safety plan must be developed to address possible worker exposure in the event that any future excavation and construction activities occur within the CBI and lagoon areas. Soil excavated below 1 foot in the CBI area and 3 feet in the lagoon area must be returned to the same depth from which it was excavated, or it must be properly managed or disposed of in accordance with applicable state and federal regulations.
- The clean soil barrier, which comprises a minimum of 3 feet of clean soil covering the lagoon area, must remain over the contaminated soils. This clean soil barrier must be properly maintained as an engineered barrier so that people do not swallow or have direct contact with contaminated soil [4].

The village of Seneca proposed a Redevelopment Project Area (RPA) in 2003 that included portions of the CBI and Prairie States areas. Plans were to annex these portions of the CBI and Prairie States areas to the village and use tax increment financing to promote private redevelopment of the site. It is anticipated that proposed users of the site may include manufacturing, assembly, warehousing, and distribution facilities [5].

Site Visit

IDPH staff visited the site on June 24, 2004. The site access road that was used during the 1997 site visit was no longer present. However, a newly cut unimproved road was accessible about 0.25 miles east of the railroad crossing from the Old Stage Road. The gate was unlocked and opened. The site was easily accessible on foot via this rock and dirt road. The site had what appeared to be freshly cut trees. No other recent human activities were observed. The tracks of deer and other animals were observed throughout the site. Several birds, squirrels, and a fox also were observed. The site was heavily wooded on the east side, whereas the west side was heavily vegetated with high grass. The area near the former lagoons was overgrown with cattails. Adjacent to these areas were bare areas of sandy soil.

Since the last site visit, an animal shelter and long-term storage units have been built along Old Stage Road immediately east of the Snowdance Enterprises (auto repair and towing service) facility that was present in 1997. These properties have not been annexed into the village of Seneca and remain on private water and sewage disposal systems.

Discussion

Chemicals of Interest

IDPH compared results of the 1999 soil and groundwater monitoring samples and 2001 soil samples with appropriate screening comparison values to select chemicals for further evaluation of carcinogenic (cancer-causing) and noncarcinogenic (non-cancer-causing) health effects (Attachment 2). Chemicals to be further evaluated are those found at levels greater than comparison values or those for which no comparison values exist. After reviewing the most recent soil and water data, IDPH determined that there were no chemicals of interest [2,3].

On-Site Soil

During the 1999 and 2001 site remediation activities at the CBI and lagoon areas, contaminated soil with elevated levels of petroleum hydrocarbons, lead, and pesticides (including DDT) was excavated and removed to an approved off-site disposal location. Subsequent soil sampling did not detect any chemicals at levels greater than comparison values [3].

On-Site Groundwater Monitoring

The 1999 groundwater investigation consisted of installing and sampling three groundwater-monitoring wells that were located around the perimeter of the capped lagoon area. Water samples were analyzed for volatile organic chemicals, semivolatile organic chemicals, pesticides,

polychlorinated biphenyls, and inorganic chemicals. No chemicals were detected at levels greater than comparison values [2].

Exposure Assessment

The potential for exposed persons to experience adverse health effects depends on several factors, including:

- how much of each chemical a person is exposed to,
- how long a person is exposed, and
- the health condition of the exposed person.

Because remediation activities have removed site contaminants to levels less than comparison values, and an engineered clean-soil barrier has been installed in the lagoon area, the potential for exposure to site contaminants should have been eliminated. Also, future land use has been restricted to industrial and commercial activities that require the development of a safety plan to protect workers prior to any construction or excavation activities on the site. Therefore, no one should be exposed to site-related contaminants.

Child Health Considerations

Children are a sensitive sub-population for exposure to some chemical contaminants. For that reason, IDPH considered children when evaluating this site. Current conditions at the site indicate that children would not be exposed to chemicals from the site.

Conclusions

Based on the site remediation data reviewed, IDPH concludes that current conditions at the former Union Mechling site pose no apparent public health hazard. Some soil contamination remains on the site, but not at levels that would be expected to cause adverse health effects.

Recommendations and Public Health Action Plan

IDPH recommends that the owner of the site abide by the land use restrictions outlined in the NFR letter issued by Illinois EPA [4]. Abiding by the land use restrictions will reduce the likelihood that anyone will come in contact with contaminated soil. Because the contaminant sources have been removed and the site poses no apparent public health hazard at this time, IDPH has no public health action plan for this site.

Preparer of Report

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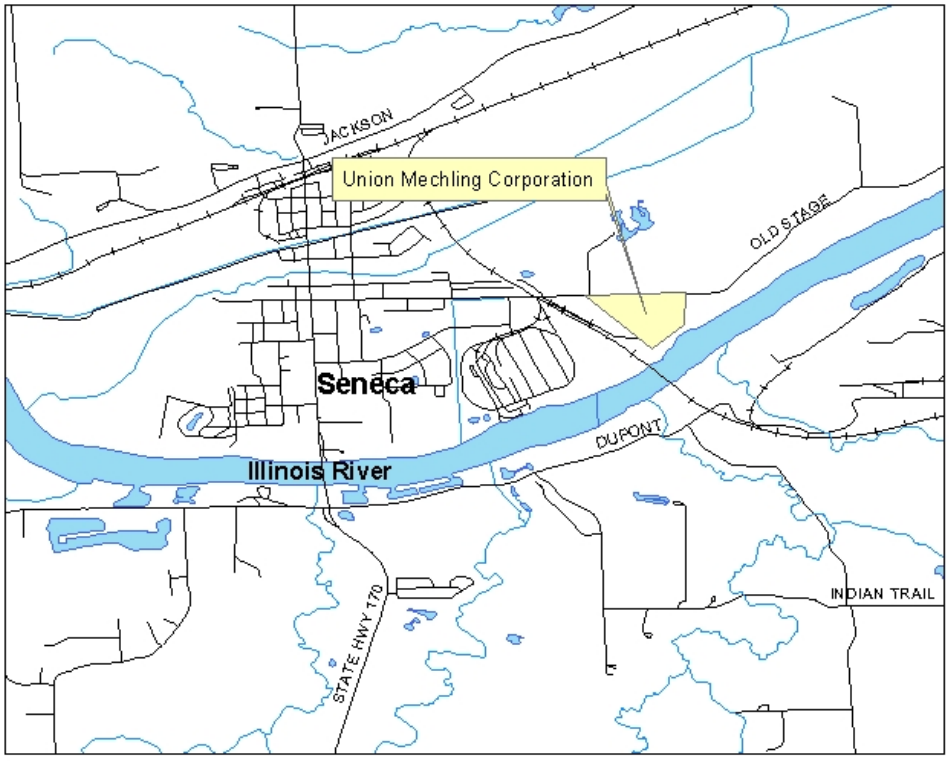
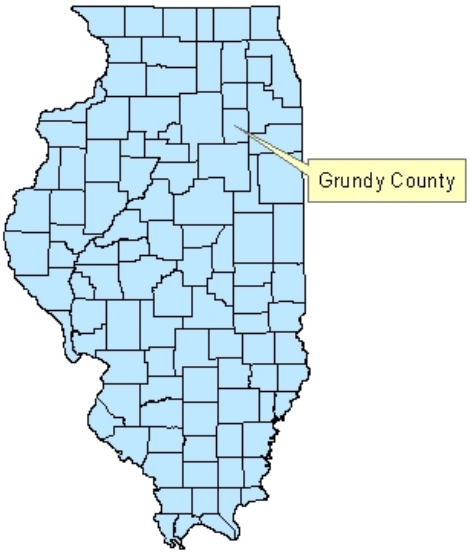
References

1. Agency for Toxic Substances and Disease Registry. Health Consultation for the Union Mechling Company, Seneca, Grundy County, Illinois. Atlanta: U.S. Department of Health and Human Services; December 1997.
2. K-Plus Environmental, Incorporated, Chicago, Illinois. Site Remediation Report for the Union Mechling/National Marine Seneca, Illinois Site. August 1999.
3. K-Plus Environmental, Incorporated, Chicago, Illinois. Site Remediation Report for the Union Mechling/National Marine Seneca, Illinois Site. April 2001.
4. Illinois Environmental Protection Agency. No Further Remediation Letter for the 65.19 Acres Site located at 7500 Old Stage Road, Seneca, Illinois. May 2001.
5. Kane, McKenna and Associates, Incorporated, Chicago, Illinois. Village of Seneca Port Authority, Old Stage Road Business Development Park (TIF No.1), Redevelopment Plan and Project. September 2003.

Attachment 1

Approximate Location of Union Mechling Corporation





Legend

- Rails
- Roads
- Surface Water

Source: Illinois Department of Public Health GIS

Attachment 2

Comparison Values Used in Screening Contaminants for Further Evaluation

Comparison values (CVs) are the calculated levels of a chemical in air, water, food, or soil that is unlikely to cause adverse health effects in exposed people. CVs are used as a screening level during the public health assessment process. Substances found in amounts greater than their CVs might be selected for further evaluation in the public health assessment process.

There are three different types of comparison values, environmental media evaluation guides (EMEGs), reference dose media evaluation guides (RMEGs), and cancer risk evaluation guides (CREGs). These values are used to screen chemicals and determine those that need to be evaluated further.

Environmental media evaluation guides (EMEGs) are derived from minimal risk levels presented in ATSDR Toxicological Profiles. Standard exposure assumptions for children and adults (body weights; ingestion rates for water, soil and air; and frequency and duration of exposure) are used. Individual EMEGs do not consider cancer, chemical interactions or multiple routes of exposure. They do help to identify specific chemicals needing further evaluation.

Reference dose media evaluation guides (RMEGs) are derived from the oral RfDs developed by USEPA using standard exposure assumptions for children and adults (body weights; ingestion rates for water, soil and air; and frequency/duration of exposure). Like EMEGs, RMEGs do not consider carcinogenic effects, chemical interactions, or multiple exposures.

Cancer risk evaluation guides (CREGs) represent levels of environmental chemicals that may pose a $1x10^{-6}$ (one in a million) excess cancer risk. They are derived using cancer slope factors published by USEPA.