

Health Consultation

RED OAK LANDFILL

RED OAK, MONTGOMERY COUNTY, IOWA

EPA FACILITY ID: IAD980632509

DECEMBER 6, 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.

You May Contact ATSDR TOLL FREE at
1-888-42ATSDR

or

Visit our Home Page at: <http://www.atsdr.cdc.gov>

HEALTH CONSULTATION

RED OAK LANDFILL

RED OAK, MONTGOMERY COUNTY, IOWA

EPA FACILITY ID: IAD980632509

Prepared by:

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

Table of Contents

Purpose.....	1
Background.....	1
Monitoring and Maintenance of the Site	2
Contaminants of Concern	2
Exposure Pathways	3
Community Health Concerns.....	3
Conclusions.....	4
Recommendations.....	4
Public Health Action Plan.....	4
Figure 1 : Site Map	5
References.....	6
Preparers of the Report	6
Certification	7

Purpose

On July 27, 2004, the U.S. Environmental Protection Agency (EPA) announced its intention to remove, or de-list, the Red Oak Landfill site from the National Priorities List (NPL). The EPA is inviting public comment on the proposed de-listing of the site from the NPL. The Iowa Department of Public Health in cooperation with the Agency for Toxic Substances and Disease Registry (ATSDR) prepared this health consultation to review the current status of the Red Oak Landfill site and to provide an evaluation of any public health consequences of de-listing the site. The information in this health consultation was current at the time of writing. Data that emerges later could alter this document's conclusions and recommendations.

Background

The Red Oak Landfill encompasses about 40 acres and is located approximately 1.5 miles northwest of the City of Red Oak, Iowa (Figure 1). The eastern boundary of the landfill site is the East Nishnabotna River. The Red Oak Landfill site was previously a limestone quarry which was operational during the 1940's and 1950's. The site was utilized as a municipal landfill by the City of Red Oak from 1962 to 1974. According to documents associated with the proposed de-listing obtained at the Iowa Department of Natural Resources (IDNR), wastes disposed at the landfill included construction and demolition debris, tree pruning wastes, municipal wastes, and industrial wastes (1). The industrial wastes included toluene, methyl isobutyl ketone, tetrachloroethylene, mineral spirits, diacetone alcohol, laminated paper containing approximately three percent mercurous chloride from battery production, and drummed filter cake containing lead.

Preliminary site investigation activities were completed on the site in 1983 and 1985. The site was proposed for the NPL in 1984 and became final in June 1986. The site was included on the NPL because it was felt the site posed a threat to public health through direct contact, slope erosion, the potential leaching of contaminants into surface water and groundwater, and the potential for groundwater contamination to reach the wells utilized by the City of Red Oak public water supply (the closest located 2.3 miles from the landfill).

The EPA conducted a remedial investigation of the landfill from 1989 until 1992. A final remedy for the site was selected by EPA in 1993 which consisted of:

- Placement of an engineered low-permeable clay cap over the landfill.
- Stabilization of the riverbank slope.
- Fencing of the site.
- Imposing deed restrictions on the site property.
- Continued monitoring of groundwater and surface water in the vicinity of the landfill.

In November 1996, ATSDR completed a health consultation to assess the possible releases and exposure to hazardous substances from the landfill site, and how these releases can endanger public health. The 1996 health consultation evaluated results from surface soil; subsurface soil; groundwater; private well; surface water and sediment from the East Nishnabotna River; and

surface water, seeps, and sediment on-site and from a nearby quarry pond. It was reported that water samples were collected from two private wells within the vicinity of the landfill, the closest located 1,600 feet to the south of the landfill. Lead was detected in one of the wells at a level of 14 µg/L, which is below the EPA Maximum Contaminant Level (MCL) or 15 µg/L. The 1996 health consultation concluded the Red Oak Landfill site posed no apparent health risk. The 1996 health consultation also concluded that the possibility of exposure to hazardous chemicals could be eliminated by implementation of final site remedy (2).

Site remedial activities were initiated in August 1997. The installation of the landfill cap, stabilization of the riverbank slope, fencing of the site, and installation of groundwater monitoring wells were completed by November 1997. Additional landfill cap and slope repairs were completed in November 1998 and November 1999. Deed restrictions on the property include placement of the site on Iowa's Registry of Hazardous Waste Sites and a requirement to retain an easement to the City of Red Oak to provide continued maintenance of the site. The Certificate of Completion of Remedial Action was issued by EPA in November 2002.

Monitoring and Maintenance of the Site

Monitoring and maintenance of the site has been completed at the site from 2001 through the present. A five-year review report was completed by EPA in September 2002 (1). This five-year review included the results of an inspection completed on June 6, 2002. The inspection revealed that fencing and signs were in place, and there was no evidence of trespassing. The cap, slope, and surrounding areas were noted as undisturbed. No new uses of groundwater or surface water that would result in new exposures were noted during the inspection. The landfill surface was observed as being in excellent condition and the riverbank slope was noted as being in good shape. The monitoring wells were also noted as being in good shape.

Annual site monitoring is also conducted by the responsible parties for the site (the City of Red Oak and Intier Automotive Seating of America, Inc.). The annual monitoring and maintenance report was submitted by these parties in November 2004 (1). This report included a summary of the inspection of the site property which was completed on June 28, 2004. The landfill cap and riverbank slope were observed to be in good condition and serving the purpose for which they were constructed. The structural integrity of the fence was observed to be sound.

Included in the November 2004 annual monitoring and maintenance report was a summary of the recent analytical results from monitoring of the groundwater wells surrounding the landfill and the surface water monitoring locations in the East Nishnabotna River. The groundwater and surface water has been tested for a variety of volatile organic chemicals, and inorganic chemicals from 2001 through 2004.

Contaminants of Concern

The contaminants of concern at the site at the time the landfill was listed on the NPL were volatile organic chemicals, solvents, and heavy metals (mainly lead). The primary concerns from these chemicals were from exposure to the groundwater and surface water and through direct contact of waste within the landfill.

Exposure Pathways

Exposure to contaminants of concern is determined by examining human exposure pathways. An exposure pathway has five parts:

1. a source of contamination,
2. an environmental medium such as air, water, or soil that can hold or move the contamination,
3. a point at which people come in contact with a contaminated medium, such as in drinking water or in surface soil,
4. an exposure route, such as drinking water from a well or eating contaminated soil on homegrown vegetables, and
5. a population who could come in contact with the contaminants.

An exposure pathway is eliminated if at least one on the five parts is missing and will not occur in the future. For a completed pathway, all five parts must exist and exposure to a contaminant must have occurred, is occurring, or will occur.

There are currently no completed exposure pathways to materials deposited within the Red Oak Landfill. Previous potential exposure to waste materials deposited in the landfill has been eliminated with the installation of the landfill cap, fencing, and stabilization of the river bank. Previous monitoring of nearby private wells indicated that contaminants from the landfill were not impacting nearby private wells. Groundwater monitoring wells and surface water surrounding the landfill has been sampled since 2001. Sampling results have shown levels that exceed chronic health effect levels for arsenic, barium, and chromium, manganese, nickel, and lead in a few of the sampling events and in a few of the groundwater monitoring wells (1). There are no individuals who are chronically exposed to water from these monitoring wells since these wells are not utilized for human consumption; therefore, there are no completed exposure pathways to groundwater in the vicinity of the landfill.

A review has also been completed of the sampling and analysis data from the Red Oak public water supply wells. At present there has not been a detection of contaminants above EPA maximum contaminant levels in the Red Oak public water supply wells (3). It is concluded that the Red Oak landfill is not having any impact on the Red Oak public water supply wells.

Community Health Concerns

The public or community was given opportunity to comment on the proposed de-listing of the Red Oak Landfill site. No community comments were received during the public comment period, which ended on August 26, 2005.

Conclusions

The current status of the Red Oak Landfill site has been reviewed to evaluate any health consequences of EPA's proposal to de-list the site from the NPL. The IDPH reviewed the site information and exposure pathways and concluded that the site poses no public health hazard now and is not expected to pose a hazard in the future. The IDPH concurs with the proposed de-listing of the Red Oak Landfill site.

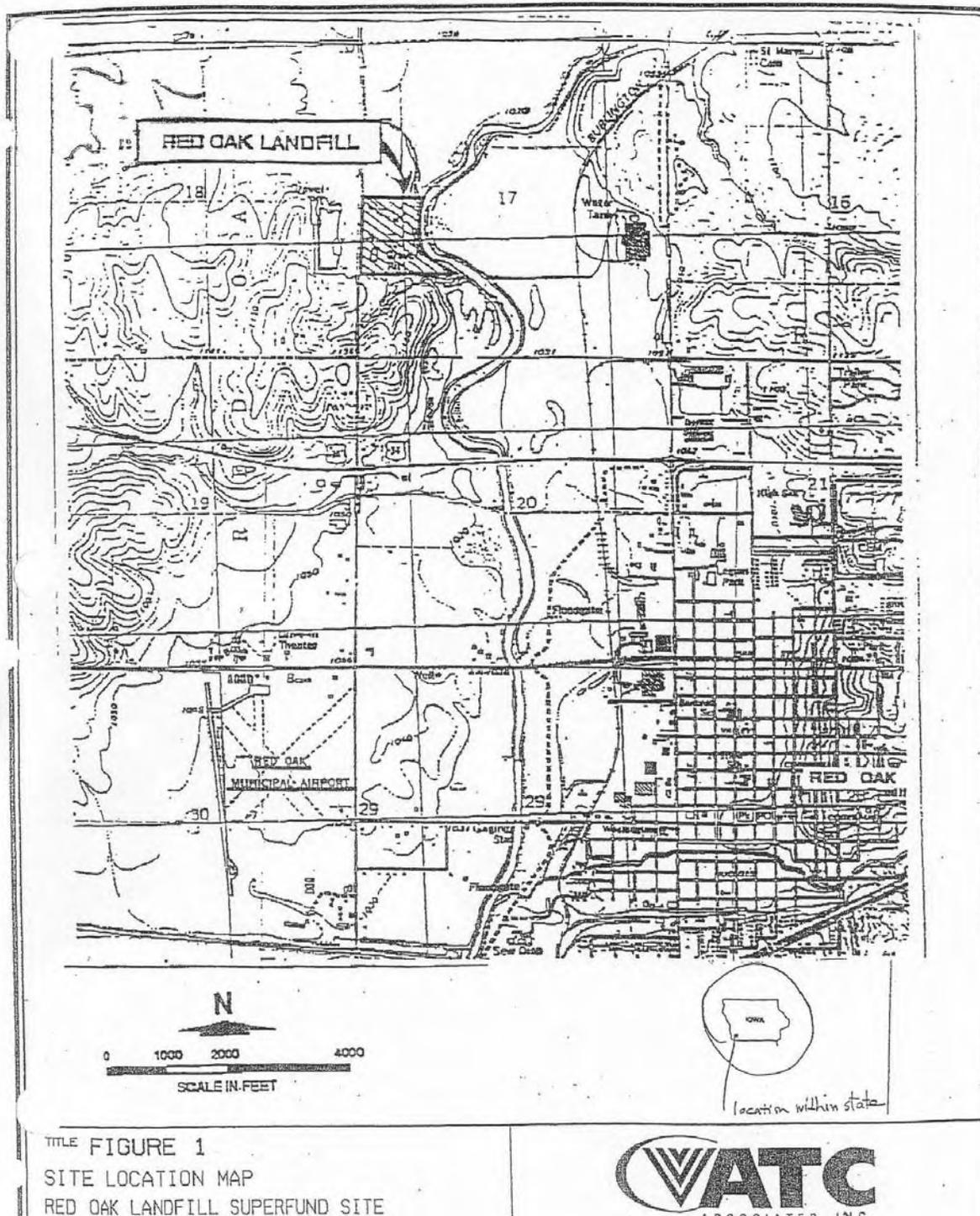
Recommendations

- The EPA and City of Red Oak should maintain and enforce restricted site access.
- Maintenance of the landfill cap and riverbank slope should be continued.

Public Health Action Plan

- IDPH will review results of annual site inspections and groundwater monitoring at the next 5-year review.
- IDPH will respond to any community concerns that may arise from the de-list of the Red Oak Landfill.

Figure 1: Site Map



References

1. U.S. Environmental Protection Agency De-listing File, Iowa Department of Natural Resources Records Department.
2. Health Consultation – Red Oak Landfill, Agency for Toxic Substances and Disease Registry, November 1996.
3. Red Oak Water Supply Sampling and Analysis Data, Iowa Department of Natural Resources Water Supply Section.

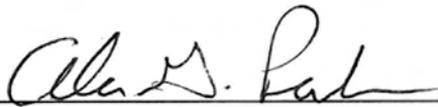
Preparers of the Report

Author

Stuart Schmitz, P.E., Sara Colboth, and Charles Barton, Ph.D., DABT
Hazardous Waste Site Health Assessment Program
Iowa Department of Public Health

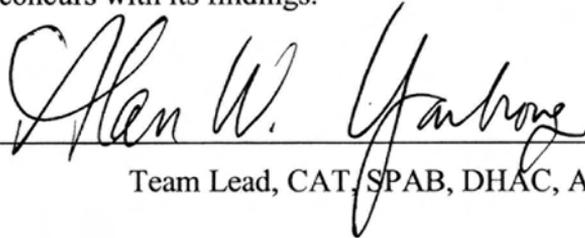
CERTIFICATION

The Iowa Department of Public Health, Hazardous Waste Site Health Assessment Program, has prepared this health consultation for the Red Oak Landfill site under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). The document is in accordance with approved methodology and procedures existing when the health consultation was being prepared. Editorial review was completed by the Cooperative Agreement partner.



Technical Project Officer, CAT, SPAB, DHAC, ATSDR

The Division of Health Assessment and Consultation, ATSDR, has reviewed this health consultation and concurs with its findings.



Team Lead, CAT, SPAB, DHAC, ATSDR