Site Review And Update

ZELLWOOD GROUNDWATER CONTAMINATION SITE

ZELLWOOD, ORANGE COUNTY, FLORIDA

CERCLIS NO. FLD049985302

SEPTEMBER 2, 1992

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

Site Review and Update: A Note of Explanation

The purpose of the Site Review and Update is to discuss the current status of a hazardous waste site and to identify future ATSDR activities planned for the site. The SRU is generally reserved to update activities for those sites for which public health assessments have been previously prepared (it is not intended to be an addendum to a public health assessment). The SRU, in conjunction with the ATSDR Site Ranking Scheme, will be used to determine relative priorities for future ATSDR public health actions.

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Prepared by

The Florida Department of Health and Rehabilitative Services
Under a Cooperative Agreement With the
Agency for Toxic Substances and Disease Registry

SUMMARY OF BACKGROUND AND HISTORY

The Zellwood Groundwater Contamination National Priorities List (NPL) site is on 57 acres in the northwestern corner of Orange County, Florida. It is approximately one-half mile west of the town of Zellwood (Figures 1 and 2). The site is bounded on the north by the Seaboard Coastline Railroad, on the east by Laughlin Road, on the south by Jones Avenue, and on the west by woods. There are approximately 300 homes within 1 mile of the site. Zellwin Farms Company and Drum Service Company of Florida have occupied the site since the early 1960s. Southern Liquid Fertilizer Company began operations at the site in the 1970s; it was sold to Douglass Fertilizer and Chemical Company in 1981, and its operations were relocated in 1984. The former fertilizer area is now occupied by Coatings Application and Waterproofing Company. Chemical Systems, which is on the western part of the site, started operations in 1982. Figure 3 depicts the site layout.

Contractors for the U.S. Environmental Protection Agency (EPA) have analyzed surface water, sediments, waste sludges, surface and subsurface soil, and shallow and deep groundwater at the site. Except for the deep groundwater, which shows no contamination, the media are contaminated with lead, cadmium, chromium, arsenic, antimony, beryllium, chlordane, di(2-ethylhexyl)phthalate and pentachlorophenol. Although early studies found cyanide in the surficial aquifer at very high concentrations (200 mg/L), more recent sampling has not found cyanide above levels of concern.

In 1983, EPA conducted an emergency removal of abandoned drums in an area immediately north of Drum Services. The 1986 public health assessment, prepared by the Agency for Toxic Substances and Disease Registry (ATSDR), concluded that the site was of public health concern because of the possibility that people may be exposed to hazardous substances on site and that contaminants might migrate into the Floridan aquifer. The public health assessment recommended that EPA consider these potential problems: contaminant migration into the deep groundwater; control of dust during soil removal activities; and release of contaminants into the air during groundwater treatment.

EPA has conducted a remedial investigation at this site (2) and has issued a record of decision (ROD) (5). The 1987 ROD selected excavation and stabilization of contaminated soil, monitoring of existing groundwater wells, and long-term groundwater monitoring as the most cost-effective remedy for reducing contamination at the site.

No community health concerns were identified in the public health assessment. However, since cleanup work began, the community has been interested in activity at the site, and there have been several reports of adverse health effects. Those concerns are reviewed in the Current Issues section of this document.

CURRENT SITE CONDITIONS

Bruce Tuovila of the Florida Department of Health and Rehabilitative Services (Florida HRS) visited the site on July 28, 1992, with Joyce Bittle and Geoffrey Price of the Orange County Public Health Unit. The site is west of U.S. Highway 441 approximately one-half mile from the town of Zellwood. Each of the four primary industries at the site are along the northern side of Jones Avenue. All are completely fenced and have gates that can be locked. EPA contractors are excavating soil from a 6-acre area approximately 200 feet north of the Drum Services property. Contaminated soil is being stockpiled on site and covered with plastic sheets to reduce dust generation. However, during the site visit, there was a significant amount of airborne dust despite those precautions. There were no signs of air monitoring equipment in use. There is no fence or other barrier around the excavation, and security is minimal. There are homes behind a line of trees approximately 250 feet north of the removal area.

Conclusions in the 1986 ATSDR health assessment are supported by more recent studies (7,8). With the exception of cyanide, which is below the level of concern, all other contaminants reported in the initial studies remain above levels of concern. Media of concern are surface soil, airborne dust and fumes, and shallow groundwater. The concern that shallow groundwater contamination could migrate to the deep groundwater aquifer is still valid.

CURRENT ISSUES

Completion of the current site cleanup should reduce or eliminate the risk of exposure. However, the potential for off-site migration of groundwater contaminants to private drinking water wells in the area is of concern.

Local residents have expressed the following health concerns:

1. Exposure to fumes or dust from the site may be the cause of acute respiratory distress in sensitive individuals.

2. Contaminants from the site have migrated into surficial aquifer wells in the area and made it necessary to dig deeper wells for drinking water.

3. Individuals who worked at Drum Services might have been exposed to contaminants and might have suffered adverse health effects.

CONCLUSIONS

The conclusions of the 1986 ATSDR public health assessment appear

to be valid. On-site workers, trespassers at the abandoned drum storage area, and residents with shallow water wells may have been exposed to the contaminants listed previously. However, it cannot be determined if that exposure is a public health hazard without additional evaluation of the duration of exposure and the levels of exposure over time. Because of the potential for contamination of private wells in the area, the site should be further evaluated.

The recommendation that contaminated soil and sediment be remediated has been followed. Dust control during remediation, however, does not appear to be effective. EPA will address treatment of shallow groundwater after the results of the soil remediation are reviewed.

RECOMMENDATIONS

Because of the need for further evaluation of the public health significance of past exposure to soil and groundwater contaminants, the possibility of exposure to airborne contamination during remediation, and the potential for future contamination of private wells in the area, Florida HRS recommends that a full public health assessment be conducted.

Because exposure to dust or fumes during remediation is a community concern, Florida HRS also recommends that EPA implement effective dust control measures and conduct air monitoring during the soil solidification process. Florida HRS encourages prompt implementation of the groundwater treatment process as soon as results of the soil solidification remedy are known. Until groundwater has been treated, we recommend that area drinking water wells be monitored periodically to ensure prompt identification of contamination.

The data and information developed in this site review and update have been evaluated to determine if follow-up actions may be indicated. Further site evaluation is needed to determine public health actions.

DOCUMENTS REVIEWED

Documents reviewed by Florida HRS during preparation of this summary are as follows:

1. NUS Corporation, Remedial Action Master Plan for the Zellwood Groundwater Contamination Site, Zellwood, Florida, June 1984.

2. NUS Corporation, Draft Remedial Investigation, Zellwood Groundwater Contamination Site, Orange County, Florida, Volumes I and II, December 1985.

3. NUS Corporation, Draft Endangerment Assessment, Zellwood Groundwater Contamination Site, Orange County, Florida, June 1986.

4. ATSDR, Health Assessment for Zellwood Groundwater Contamination Site, Zellwood, Orange County, Florida, August 21, 1986.

5. EPA, Record of Decision for the Zellwood Groundwater Contamination NPL CERCLA Site, Orange County, Florida, December 17, 1987.

6. EPA, Summary of the Remedial Alternative Selection, Zellwood Groundwater Contamination Site, Orange County, Florida, Undated.

7. Roy F. Weston Inc., Sampling Activity Report for Zellwood Groundwater Contamination NPL Site, Zellwood, Orange County, Florida, August 5, 1988.

8. Roy F. Weston Inc., Information Management and Computer Mapping for Zellwood Groundwater Contamination NPL Site, Zellwood, Orange County, Florida, December 12, 1988.

9. Tetra Tech Inc., Environmental Protection Agency Alternative Remedial Contracting Strategy (ARCS), Zellwood Groundwater Contamination Site, Zellwood, Orange County, Florida, September, 1991.

Preparer of the report: Bruce J. Tuovila, M. S.

Figure 1. Map Showing Location of Orange County

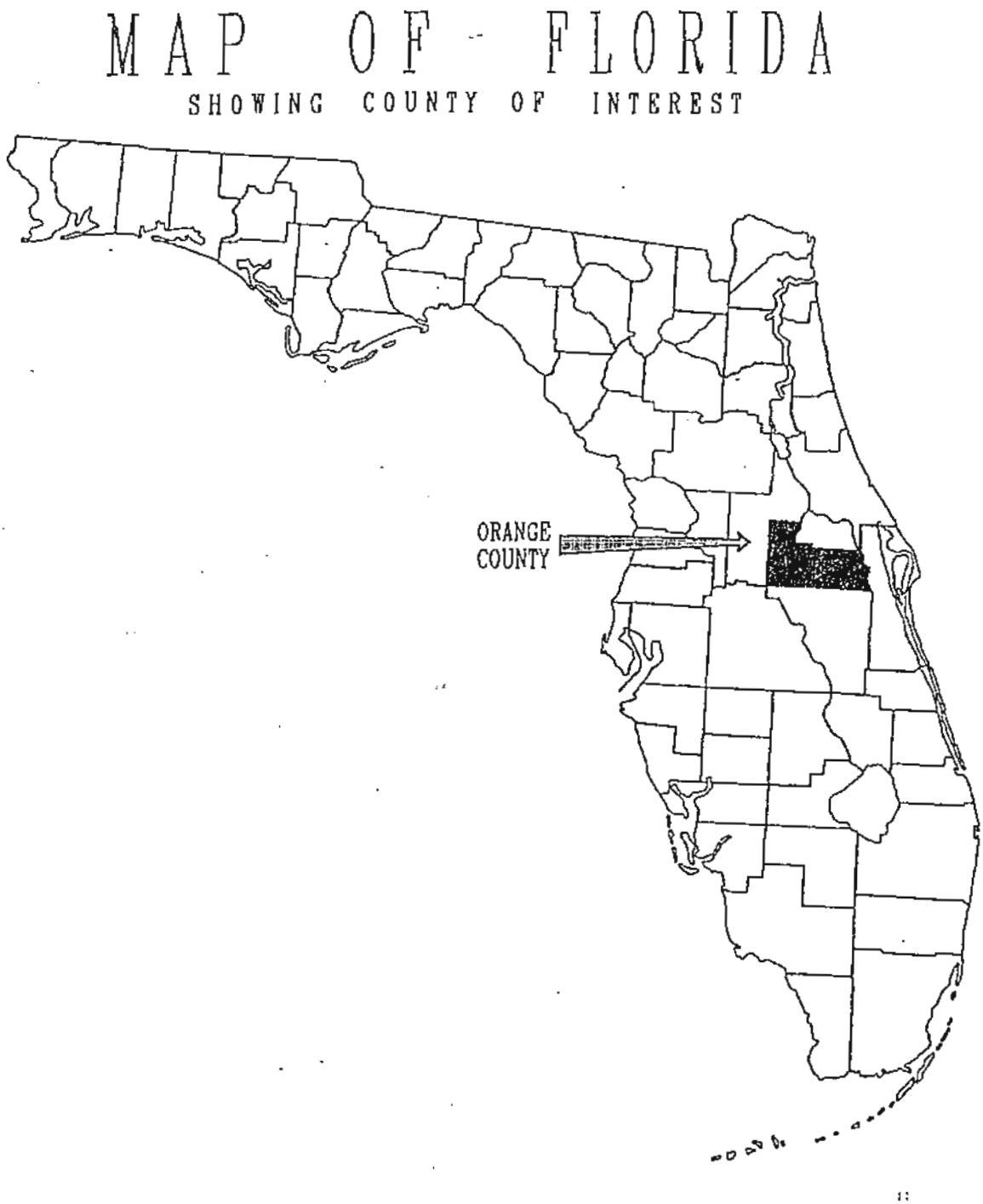
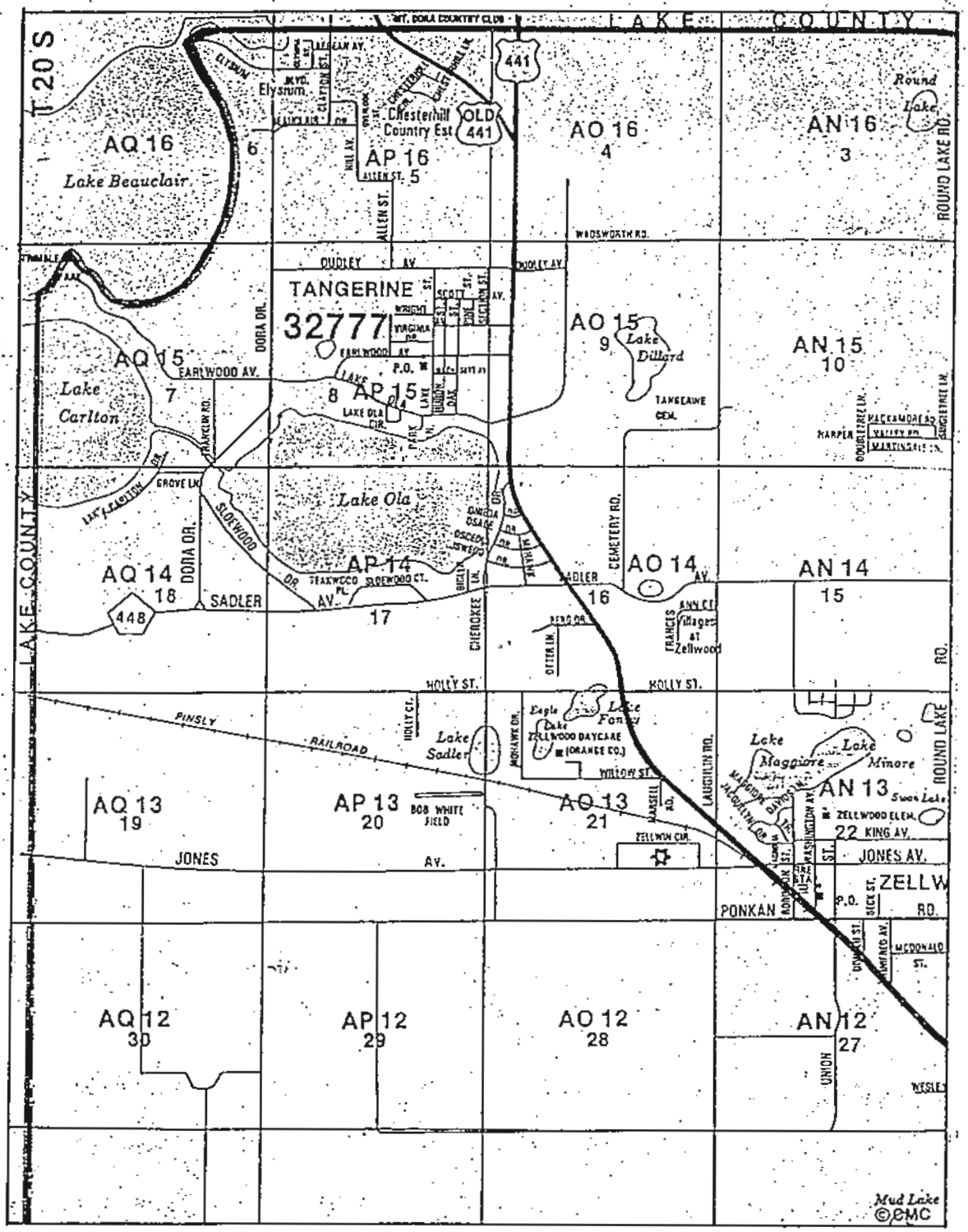


Figure 2. Map Showing Approximate Location of Zellwood Groundwater Contamination Site



☆ Zellwood Groundwater Contamination Site

Figure 3. Zellwood Groundwater Contamination Site