Health Consultation

Osceola Incinerator

(Arkansas Municipal Waste-to-Energy)

100 Incinerator Road

Osceola, Mississippi County, Arkansas 72370

EPA Identification Number: ARD982286957

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Prepared by
Arkansas Department of Health

Under a Cooperative Agreement with
Agency for Toxic Substances and Disease Registry

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STATEMENT OF ISSUES AND BACKGROUND

Statement of Issues

The Arkansas Department of Health (ADH) prepared this health consultation in response to a written letter of petition to the Agency for Toxic Substances and Disease Registry (ATSDR). ATSDR received the letter of petition from a private citizen in October of 2003, requesting that an investigation be conducted to determine possible health implications of exposures to environmental contaminants potentially released from the former Arkansas Municipal Waste-to-Energy (AMWE) facility in Osceola, Arkansas. ADH, under cooperative agreement with ATSDR, investigated the petition request and prepared this consultation in response to the petition.

Background

The city of Osceola, in Mississippi County, is situated on the Mississippi River. Osceola is located along Interstate I-55, and is 172 miles northeast of Little Rock, Arkansas. The city covers 7.8 square miles and has a population of over 9,000 people. The landscape of Mississippi County is flat, fertile, Delta farmland. The economy is made up of diversified farming and light manufacturing.

On February 19, 2003, Arkansas Department of Environmental Quality (ADEQ) received a formal complaint from an Osceola citizen, alleging improper burning and storage of flammable waste at the AMWE site located at 100 Incinerator Road, Osceola, Arkansas (Appendix A, Figure 1). The types of waste found stored at the incinerator were medical waste, municipal waste, industrial waste, contaminated pharmaceuticals, and four drums of low-level radioactive waste.

While investigating the AMWE incinerator facility, ADEQ inspectors discovered two associated buildings (J.T. Parsons warehouse and the E.R. Moore building – Appendix A, Figures 2-4) that AMWE used to store an estimated 20,000 drums and assorted containers of medical and industrial waste. The investigation revealed the presence of hazardous substances and confirmed the presence of wastes that exhibit hazardous waste characteristics. Many of the drums/containers in the warehouse were in extremely poor condition to the extent that there were numerous leaking and bulging containers. The warehouse structure was also in poor condition and ADEQ took actions to stabilize the structure.

In October of 2003, ATSDR received a petition from a citizen requesting an investigation be conducted because of AMWE's alleged improper operational practices in handling hazardous waste and the potential risk it posed to the community. A daycare center is located approximately one block from the J.T. Parsons warehouse, and there is a residential area nearby.

Under contract to the City of Osceola, AMWE leased and operated the municipal waste incinerator on the southeast edge of the city. The lease also allowed AMWE to receive and incinerate medical waste and non-hazardous industrial waste from other sources. AMWE operated the incinerator from July of 2001 to March of 2003. ADH estimates that approximately 1,400 people living in a 1-mile radius of the site may have been subjected to the air emissions produced while the AMWE incinerator was in operation.

ADH and ADEQ worked to assess and stabilize the on-site materials through identifying, packaging and moving all medical waste to a staging area in the incinerator complex. ADEQ

worked with potentially responsible parties (PRPs) to characterize and remove their waste for proper disposal. ADEQ's initial characterization of random drum samples indicated that approximately 5 percent of the drums contained flammables. ADEQ coordinated the identification, characterization and removal of approximately 10,000 drums before requesting assistance from the US Environmental Protection Agency (EPA) in June of 2004 [1].

EPA arrived at the site on June 17, 2004, to assume the role of on-scene coordinator. EPA provided two 24-hour security guards, hourly police surveillance, locks and restricted access to the area. These security measures will continue throughout the duration of remediation of the site. The incinerator complex perimeter is secured by a locked gate and fencing on three sides, with a railroad track on the fourth side. The railroad track is on a steep incline that provides a physical barrier to the incinerator.

Pollution Control Industries (PCI) is a primary PRP for the J.T. Parsons warehouse contents. On August 17, 2004, PCI signed an order with EPA to assume the removal and proper disposal of all remaining waste at the J.T. Parsons warehouse. In January of 2005, PCI began the removal activities and set an expected completion date as the end of May 2005. Upon completion of the removal activities, EPA will have the floor cleaned and decontaminated. Post sampling test should be conducted to confirm that decontamination was effective in reducing levels of contamination below ATSDR screening values.

DISCUSSION

Exposure Pathway

The route a substance takes from its source to its end point, and how people can come into contact with (or get exposed to) it is referred to as an exposure pathway. An exposure pathway has five parts: a source of contamination (such as an abandoned business); an environmental media and transport mechanism (such as movement through groundwater); a point of exposure (such as a private well); a route of exposure (eating, drinking, breathing, or touching), and a receptor population (people potentially or actually exposed). When all five parts are present, the exposure pathway is termed a completed exposure pathway. Figure 5 summarizes the pathways for this site and indicates whether each is an incomplete or potential exposure pathway.

Environmental Data Evaluation

ADH reviewed the available data to determine whether they were sufficient to address the community health concerns considered in the health consultation. On March 25, 2003, ADEQ collected 6-soil/sediment samples at depths ranging from 0 – 6 inches on and around the incinerator site (Appendix A, Figure 6). The samples were tested for volatile organic compounds (VOCs) because of the spent organic solvents leaking from tanker trucks that were present at the incinerator site during the initial visit [2]. The test detected levels of methylene chloride, 1,2,4-trimethylbenzene, n-butylbenzene, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, and n-propylbenzene above ATSDR comparison values. Soil/sediment sample results can be seen in Appendix B, Table 1.

Several months after these samples were taken, the City of Osceola removed several inches of soil from most areas surrounding the incinerator complex. The excavated soil was then disposed

of at an appropriately permitted landfill. No post-removal samples have been collected. Because the contaminated soil has been removed, the site is fenced, and is located in an industrial area where the public is not expected to traverse, ADH considers the exposure pathway for soil/sediment to be incomplete.

The area water needs are met by the City of Osceola's Water and Wastewater Department. The municipal water well and well used for industrial purposes are at a depth of 1,500 feet and is drawn from the Wilcox Formation. Site contaminants do not appear to have impacted the municipal well. The water department is regulated by state and federal rules and regulations. The water is monitored regularly by ADH and is in compliance with EPA's National Primary Drinking Water Standards. For this reason, ADH considers the exposure pathway for ground/surface water to be incomplete because no route of exposure to the public exists.

The AMWE incinerator site and the two associated buildings are located in an industrial area of the city of Osceola. No information is available to assess the potential affects that AMWE activities may have had on the area biota (plant and animal). Because residents of the community do not consume biota from the area of the investigated site, ADH considers the biota pathway to be incomplete.

Inspections of AMWE incinerator site by ADEQ personnel, during the period that the incinerator was in operation, indicate that the emissions were clear and colorless. It is also instructive to note that the record indicates, due to a significant fire and a variety of mechanical breakdowns, the incinerator complex was not in operation for a significant amount of the time it was leased by AMWE. There are no air emission sampling data available to confirm compliance with air emission standards. Air emission sampling data are necessary for ADH to evaluate the community health concerns.

COMMUNITY HEALTH CONCERNS

In a written letter of petition to ATSDR, the petitioner expressed concern the alleged improper operational practices at the AMWE site posed a potential public health risk to the community. Specifically, the concerns included storage of hazardous and medical waste in the J.T. Parsons warehouse and E.R. Moore building, and the incineration of such waste. The petitioner indicated that a daycare center is located near the facility.

CHILD HEALTH CONSIDERATIONS

In communities faced with air, soil, water, or food contamination, the many physical differences between children and adults demand special emphasis. Children could be at greater risk than are adults from certain kinds of exposure to hazardous substances. Children play outdoors and sometimes engage in hand-to-mouth behaviors that increase their exposure potential. A child's lower body weight and higher intake rate results in a greater dose of hazardous substance per unit of body weight. If toxic exposure levels are high enough during critical growth stages, the developing body systems of children can sustain permanent damage. Finally, children are dependent on adults for access to housing, for access to medical care, and for risk identification.

Thus, adults need as much information as possible to make informed decisions regarding their children's health.

There has been special concern for the children that attend the day care located near the incinerator complex. The operation of the incinerator presents a potential past exposure pathway (via inhalation of air emissions) for children and adults of the community. The lack of air emission data from the operation of the AMWE incinerator prevents ADH from making a determination as to whether adverse health effects in children from inhalation of the air emissions were likely to have occurred in the past. As previously discussed, exposures to soil/sediment, groundwater, and biota, as they relate to the AMWE site, do not present a present, or future completed pathway and likely did not present completed pathways in the past.

CONCLUSIONS

Due to a lack of air emission sampling data from the operation of the AMWE incinerator located in Osceola, Arkansas, ADH concludes that the site presents an *indeterminate public health hazard* for past air exposures. This category is used in ATSDR's documents when a professional judgment about the level of health hazard cannot be made because information critical to such a decision is lacking; data or information are not available for all environmental media to which humans may be exposed; and there are no community-specific health outcome data to indicate that the site has had an adverse impact on human health. Present and future exposure pathways for air, soil, water, and biota are not complete, and therefore, pose *no apparent health hazard*.

RECOMMENDATIONS

As part of prudent public health practice ADH recommends:

- The responsibility assumed by PCI of removal and proper disposal of all remaining waste at the J.T. Parsons warehouse continue uninterrupted until remediation is complete.
- PCI and or EPA decontaminate the floor of the J.T. Parsons warehouse when removal is complete.
- Security provided by EPA remains on-site until remediation is complete.
- Post-sampling tests of the site be conducted to confirm that decontamination was effective in reducing levels of contamination below ATSDR screening values.

PUBLIC HEALTH ACTION PLAN

The purpose of the Public Health Action Plan (PHAP) is to ensure that this health consultation not only identifies any public health hazards, but also provides a plan of action designed to mitigate and prevent adverse human health effects resulting from exposure to hazardous

substances in the environment. The PHAP implemented by ADH for the AMWE site is as follows:

Past Activities

- ADH personnel conducted 22 site visits from February of 2003 through December of 2004.
- ADEQ, ADH, City of Osceola and Mississippi County representatives worked collaboratively from February of 2003 through July of 2004, to ensure the proper identification, containment and disposal of the medical waste identified on site.
- ADEQ coordinated the characterization and removal of approximately 10,000 drums of waste from April of 2003 through June of 2004.
- ADEQ coordinated the removal of all waste from the E.T. Moore building and supervised the decontamination of the concrete floors between April of 2003 and June of 2004.
- EPA, ADEQ, and ADH spent two days in June of 2004, meeting with City officials, County Officials, Business Leaders, members of the Public and the Noah's Ark Day Care Facility to explain exactly why they were there, what they were tasked to do, and what the approximate timeline was for this effort.

Ongoing Activities

- PCI continues to remove the remaining drums in the J.T. Parsons warehouse.

Future Action Plans

- ADH will provide concerned residents and other interested stakeholders with copies of this completed health consultation for the Arkansas Municipal Waste-to-Energy site.
- ADH will continue to review sampling data collected by ADEQ, EPA, and/or PCI to evaluate public health risk.
- ADH will update/complete the community needs assessment.
- ADH will conduct health education in the community, as needed and/or requested.

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CERTIFICATION

This health consultation for the Arkansas Municipal Waste-to-Energy (AMWE) site was prepared by the Arkansas Department of Health under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It was completed in accordance with approved methodology and procedure existing at the time the health consultation was initiated. Editorial review was completed by the cooperative agreement partner.

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

Roberta Erlwein
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REFERENCES

1. Arkansas Department of Environmental Quality. Removal Action Update. Arkansas Municipal Waste-to-Energy warehouse. Osceola, Arkansas. June 2004.
2. Arkansas Department of Environmental Quality Memo. Dated April 23, 2003. From Jeff Ruehr to Penny Wilson. Osceola Chemical Results. Collected on March 25, 2003.