

## Hazardous waste burning in cement kilns

No evidence of human health impact within local communities



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## Studies to be discussed

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- 1997-2003 EPA funded Kansas Medical Center and KU study for southeast Kansas (Ashgrove Cement, Lafarge, Heartland Cement, Safety-Kleen)
- 1996 EPA multisource human risk assessment (Holcim Midlothian, North Texas Cement, TXI and Chaparral Steel company)
- 1995 EPA animal health survey

# Southeast Kansas Study

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- EPA funded the seven year study at a total cost of \$775,800
- The 4 communities studied had 3 cement kilns burying hazardous waste and 1 hazardous waste incinerator. Control community had no such industries.
- The EPA set three goals for this investigative study. They are as follows:
  - ▶ Perform a human health study in Southeast Kansas focusing on the operation of four commercial hazardous waste burners in the area and other potential sources of environmental releases;
  - ▶ Solicit Stakeholder involvement in the design and performance of the study;
  - ▶ Communicate the results of the study to all Stakeholders.

# Southeast Kansas study continued

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- Methodology

- ▶ 2500 individuals (cohorts) used per community
- ▶ American Thoracic Society (ATS) questionnaires
- ▶ Quality control reviews
- ▶ ER data
- ▶ Lung function studies
- ▶ School inhaler program
- ▶ Cancer and death registries
- ▶ Environmental monitoring
  - VOC,D/F, HM, dust
  - Meteorological

- Conclusion

- ▶ No increase in respiratory illness compared to control community
- ▶ No increase in childhood cancer rates as compared to control community
- ▶ No increase in cancer and non-cancer health effects in communities with hazardous waste incineration facilities as compared to a control community without such facilities

## Midlothian, Texas study – human risks

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- Study released by EPA January 1996
- Multisource human health risk assessment to answer, „What is the potential for cancer and non-cancer health risks associated with the emissions from Chaparral Steel Company, Holcim Midlothian Cement Plant, North Texas Cement Company, and Texas Industries“.
- Results from modelling indicate a slight potential for non-cancer health risks from fugitive dust from Chaparral Steel Company after a period of 30-40 years exposure
- Evaluation of over a thousand samples collected indicate that exposure to the monitored levels are not likely to result in adverse health effects
- Air and soil concentrations were found to be similar to those measured in other Texas communities and in local and national background samples

## Midlothian, Texas – Animal health survey

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- September 1995
- Survey sent to ranchers and residents with agricultural tax exemptions for large animals
- Large animal data to augment risk assessment modelling
- Low response, EPA unable to draw scientifically valid conclusion
- Responses collected indicated no health effects for livestock

## Overall conclusions

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- When handled properly, the use of hazardous waste derived fuels in cement kilns pose little or no health risk to local communities
- Studies such as these should be used in permitting hearings
- Experimental design of the southeast Kansas study can be replicated for other studies