

US EPA ARCHIVE DOCUMENT

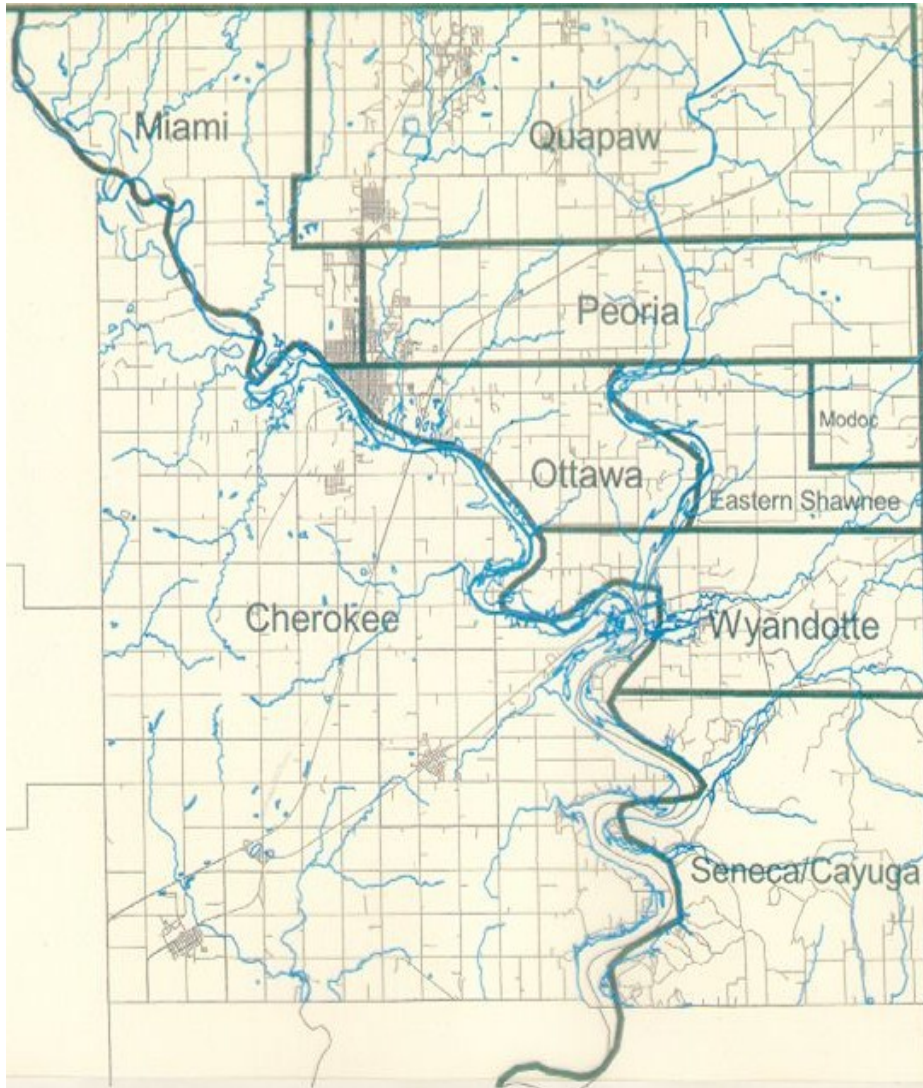
Making Outliers Matter

Community Involvement In Risk and Public Health Assessments:

Case Study - Tar Creek Superfund Site

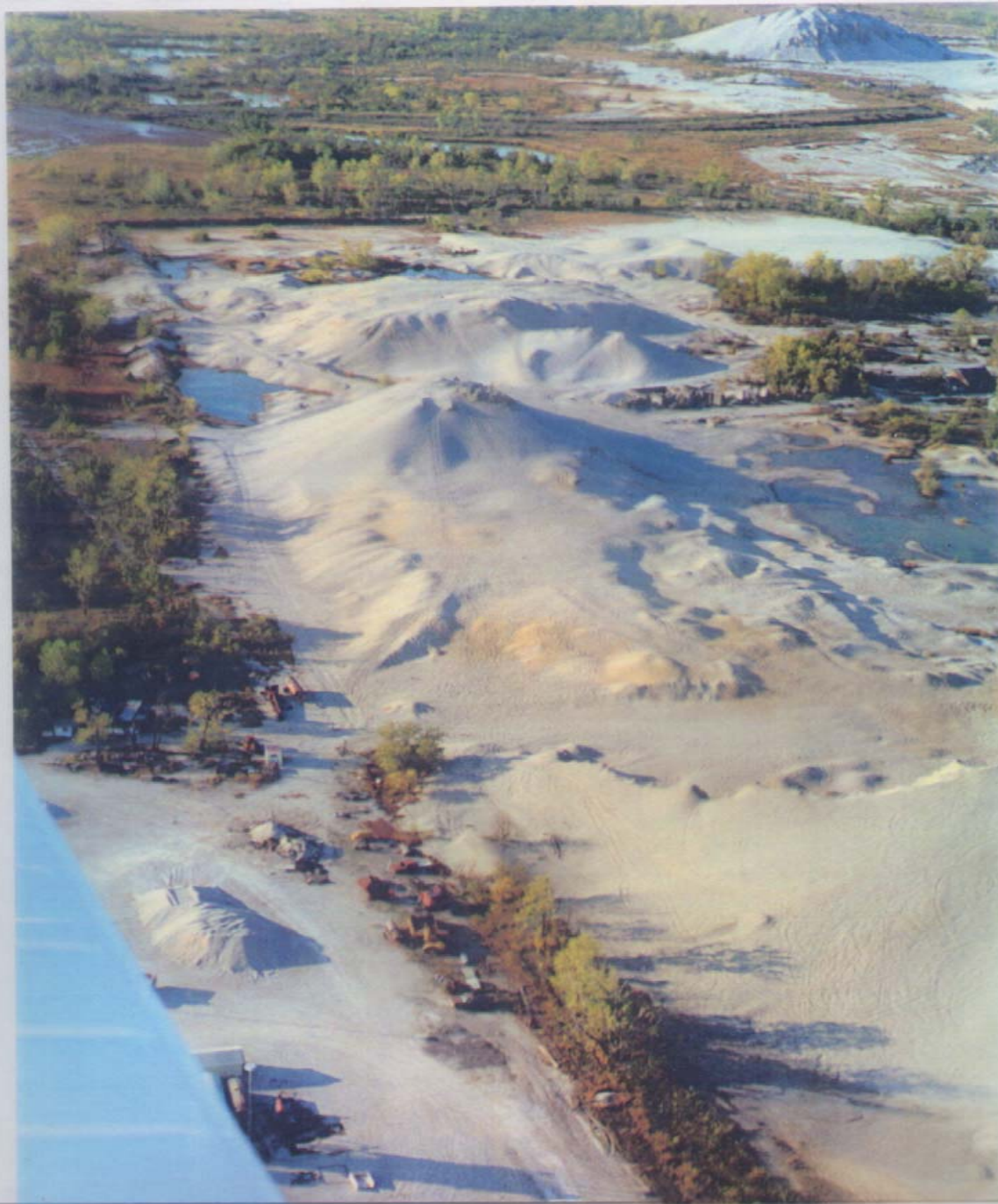
Earl L. Hatley, MA
Discussant





Ten Tribes call this
northeastern
corner of
Oklahoma home

All Ten Tribes live
within the
epicenter area
and downstream
from the site





One of the first
sites listed on the
National
Priorities List
(NPL) in 1983

The epicenter of
the site covers 47
square miles







Affected towns have additional risks



Lead and Zinc





EPA spent over 135 Million dollars to reduce risk by removing lead contaminated soil from yards, schoolgrounds and parks.



Needleman
contended
that better
housekeeping
would not be
required if the
stream of
exposure to
lead were
turned off in
the first place

128 smoke.

- **Since the Tar Creek Site was placed on the National Priorities List (NPL) in the 1983,**
- **There has never been a health study or a door-to-door survey conducted by a state or federal agency in the area to try and determine what the prevailing illnesses are and whether these illnesses may relate to exposures to the host of toxic heavy metals found in the waste materials and mine water of the Superfund Site.**

Underground Mining Method



The Spirit of Environmental Justice

- On February 11, 1994, President Clinton issued Executive Order 12,898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.
- The Executive Order required federal agencies to consider disparate impacts of their decisions on environmental justice communities (Communities of color and/or low income)
- EPA and federally funded state environmental agencies are obligated by this framework not to allow the permitting of additional facilities that could add further toxic burdens on designated environmental justice communities.
- Agencies are also committed to ensure that these communities are prioritized for toxic site cleanups and that they share as partners with the agencies in decision-making. Federal agencies (including EPA, Fish and Wildlife Service, Department of Defense, Department of Energy) developed environmental justice protocols for interacting with citizen groups and tribal governments.
- But there is no real enforcement mechanism in the Executive Order and the federal government's steps to address environmental justice were largely window dressing.

When we talk about environmental justice, we mean calling a halt to the poisoning and pollution of our poorest communities, from our rural areas to our inner cities. When our children's lives are not longer cut short by toxic dumps, when their minds are no longer damaged by lead poisoning we will stop wasting energy and intelligence that could build a stronger, more prosperous America.

President Bill Clinton

Metals of Primary Concern:

Lead, arsenic, cadmium, manganese, iron and zinc.

- According to ATSDR TOX Profiles, 2003:
- **Lead:** long-term low level exposure (10 micrograms/deciliter and above) can result in pre-term birth, decreased IQ and growth in children, increased blood pressure in middle-aged males, impaired learning and reduced birth weight.
- **Cadmium:** Long-term low level (0.001 – 5 mg/kg/day) exposure produces renal or kidney damage and increased blood pressure, lung disease, diabetes, weak bones and cancer.
- **Arsenic:** Long-term low level exposure (50 – 500 ug/kg/day) causes skin or lung cancer, systemic effects and skin lesions.
- **Iron:** Chronic ingestion of high levels causes diabetes, liver disease, myocardial infarction, myocardiopathy and heart attack.
- **Manganese:** Exposure is associated with Parkinson's Disease, ADHD and nervous system problems.
- **Zinc:** At high levels can cause latent liver dysfunction, pulmonary fibrosis, lower levels of HDL (high density lipoprotein cholesterol).

RESULTS: 562 Households Surveyed

- miscarriages (24%),
- Parkinson's disease (7%),
- heart disease (40%),
- hypertension (58%),
- cancer (38%),
- diabetes (43%)
- and kidney disease (11%).
- Non-osteoarthritis related arthritis diseases (39%).
- It appears that our surveyed population is sicker than the general population of Oklahoma or the country;
- however, that will have to be determined by the experts we hope to work with on interpreting this information, especially as we improve our methods with experience.

- **It is interesting to us that we obtained a racial mix of respondents that is pretty close to the general population;**
- **In addition, the households interviewed appeared to be predominantly long term residents of the area. Lowest quadrant had mean of 22 years.**
- **We are also concerned with the percentage of those across the communities with asthma (35%), learning disabilities (14%) and ADHD (14%).**





ODEQ Fish Consumption Advisory:

- Eat no more than Six 8-oz fish meals per month. Fillets only, of all species caught from the Neosho and Spring Rivers.

Clean Coal is a Dirty Lie



- **Other studies show that at least five years is required for fish to become safe for human consumption, once mercury sources are greatly reduced**

(Florida Department of Environmental Protection, “The Everglades Mercury TMDL Pilot Study: Final Report. 2003).

- **Presently, 45 states have issued state-wide fish consumption warnings due to mercury pollution of all water bodies in the states. Those that have only watershed specific warnings or have no warnings, have not conducted or completed state-wide studies.**

Metals. Nutrients. Synergy

- In a study produced by the Oklahoma Water Resources Board (OWRB) in 1990 as the result of an EPA funded Clean Lakes Project (Phase I), sediment and water samples from Grand Lake and its tributaries (Spring River, Neosho River, and Elk River) were sampled for potential toxicity resulting from sediment metals accumulation and the degree of potential nutrient problems in the lake.
- As a result, the study found that, “The upstream portion of Grand Lake is impacted by heavy metal contamination from the abandoned lead-zinc mines,” and “although heavy metals would continue to be accumulated in sediments of Grand Lake,” “the metals appear to be chemically bound to the sediments...” Therefore, “.....Contamination appears to be confined to sediments in the upper reaches of the lake and does not pose an immediate threat to the overall quality of water in Grand Lake.”

Let's Look Again

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Tom Lindley

“But the people did speak out against a river that ran orange, and those in power did pay attention. That’s a powerful story.”

Earl L. Hatley, MA

GRAND Riverkeeper

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