

# Remediation and Redevelopment of Historical Smelters



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Quality

# Smelter Cleanup



- ❧ Is actually a cleanup of the entire smelter town due to the wide use of the smelter waste as fill and gravel
- ❧ No records were kept of where the smelter waste was taken
- ❧ We look for visible smelter waste and use extensive sampling methodologies (wet chemistry, XRF)
- ❧ Often one of the biggest issues is getting permission from the land owner to sample and/or clean up their property

# Smelters in Oklahoma



- ❧ DEQ has located 17 smelters in Oklahoma
- ❧ Some operated side by side and were acquired by a larger neighbor
- ❧ Therefore, there are only 13 smelter “sites” on which to concentrate cleanup efforts
- ❧ Early attention was given to the three longest operating smelters
  - ❧ Bartlesville
  - ❧ Blackwell
  - ❧ Henryetta

# Cleanup Programs



- ❧ Four different cleanup programs have been used to oversee smelter cleanups
  - ❧ The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, aka Superfund)
  - ❧ The Resource Conservation and Recovery Act (RCRA, aka Hazardous Waste law)
  - ❧ Voluntary Cleanup Program
  - ❧ Brownfields Program

# Responsible Parties



- ❧ Major mining companies
  - ❧ Cyprus Amax
  - ❧ Phelps Dodge
  - ❧ Freeport MacMoRan Gold and Copper
  - ❧ ASARCo
  
- ❧ Some small entities just closed shop
  - ❧ No surviving corporation or responsible parties

# Redevelopment Potential



Location, Location, Location

Metal contamination easy to contain

# Location



- ❧ The single most important factor in redeveloping any contaminated site
- ❧ Access to roads, rail, ports, airports, and customers
- ❧ Developers are interested in good locations
- ❧ Developers are worried about the unknowns associated with contaminated property
  - ❧ What is hidden?
  - ❧ How much will it cost?
  - ❧ What is the liability?

# In Oklahoma



- ❧ Six smelter sites have been cleaned up
- ❧ Two cleanups are moving forward
- ❧ Two cleanups are stalled due to budgetary issues
- ❧ One smelter has proven difficult to locate
- ❧ One smelter is within the Tar Creek Superfund site and will be addressed during that cleanup
- ❧ One smelter has been investigated but did not score high enough on the HRS to warrant Superfund action and no viable responsible party has been identified



# Four Smelter Sites Have Been Redeveloped

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- ❧ Two smelter sites were incorporated into the same Superfund cleanup in Henryetta, Oklahoma
  - ❧ Now a developing industrial park
- ❧ The Blackwell Smelter site was developed into an Industrial Park prior to cleanup
  - ❧ Cleanup occurred around the active businesses
- ❧ The cleanup of the Sand Springs Smelter site engendered two major developments
  - ❧ Cimarron Center
  - ❧ Keystone Corridor

# Henryetta



# 2007 Region 6 Phoenix Award

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# Successful Because



- ❧ The project had a local “champion”
- ❧ Location – US Hwy 75 and I-40
- ❧ EPA paid for the cleanup through the Superfund Removal Program

# Federated Metals



# Cimarron Center



# 2004 Region 6 Phoenix Award

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# Successful Because



- ❧ Responsible Party paid for the cleanup
- ❧ Developer worked with Responsible Party and portions of the development are part of the remediation, i.e., the parking lot is the final cap to the disposal cell
- ❧ LOCATION
  - ❧ It is next to the only bridge over the Arkansas River for miles.



# Keystone Corridor



- ❧ Across the street from Cimarron Center
- ❧ Used to be a contaminated neighborhood
- ❧ Yards were cleaned up as part of the Federated Metals Cleanup
- ❧ Once Cimarron Center took off, this property became highly desirable for additional retail development
- ❧ City acquired the property, conducted additional environmental work, and made it available for development
- ❧ Several retail and services have located on the property and it continues to develop.

# Why Smelters Can Be Easily Redeveloped



- ❧ Most metals do not migrate under normal conditions; once placed in a disposal cell they do not move
- ❧ Often the wastes are on the surface and the soil and groundwater are relatively clean under the waste
  - ❧ Only one smelter in Oklahoma has a groundwater issue
- ❧ The smelter wastes are earthen and support weight
- ❧ They are often in desirable locations
- ❧ Responsible parties may have a vested interest in cooperating with a community to clean up the property so it can be redeveloped
- ❧ The development of the property adds a comfort level that the property will be maintained

# Problems



- ❧ The contamination is usually widespread and many property owners must be involved
- ❧ Costs can be high if there is no Responsible Party
- ❧ Liability
  - ❧ Superfund
    - ❧ Brownfields provides legal means of limiting a new owner's liability
  - ❧ Third Party
- ❧ Time

# Presumptive Remedies



- ❧ Consolidate and cap on site
- ❧ Consolidate, treat to stabilize, and cap on site
- ❧ Dig and haul



# On-Site Disposal Cells



- ❧ Must be maintained forever
- ❧ Deed Restrictions on digging
- ❧ Institutional Controls
- ❧ What happens if they fail?
  - ❧ Long Term Stewardship

# Questions?



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