

"Together...shaping the future of Electricity"

## **MGP Site Management Program**

Speaker:

Andrew J. Coleman, Sr. Project Manager

MGP Site Management Staff

Babu R. Nott, Senior Program Manager

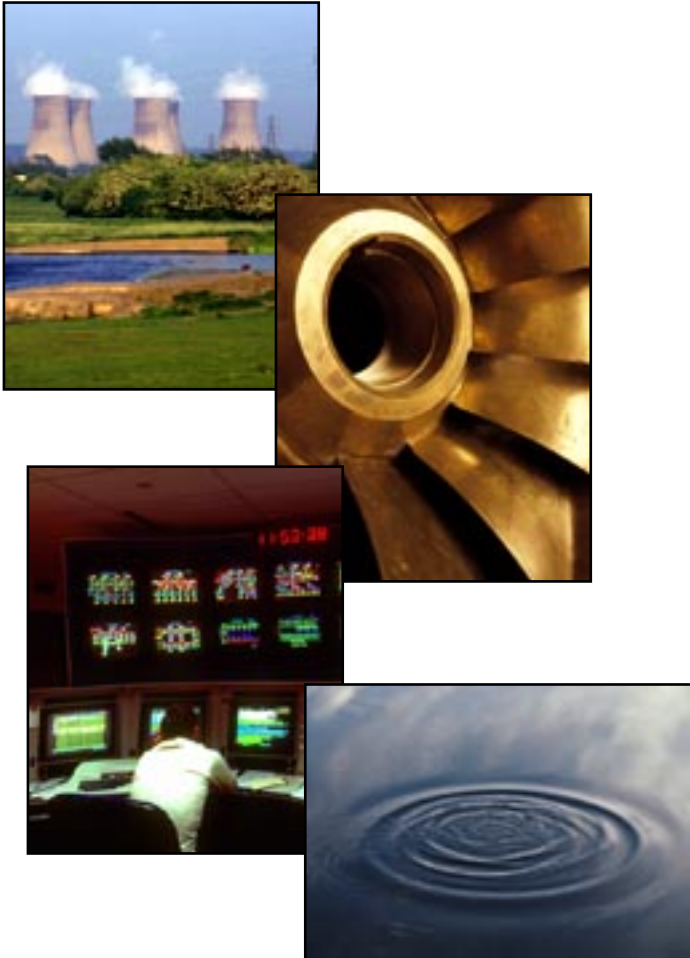
James Lingle, Manager

# Together...shaping the future of electricity



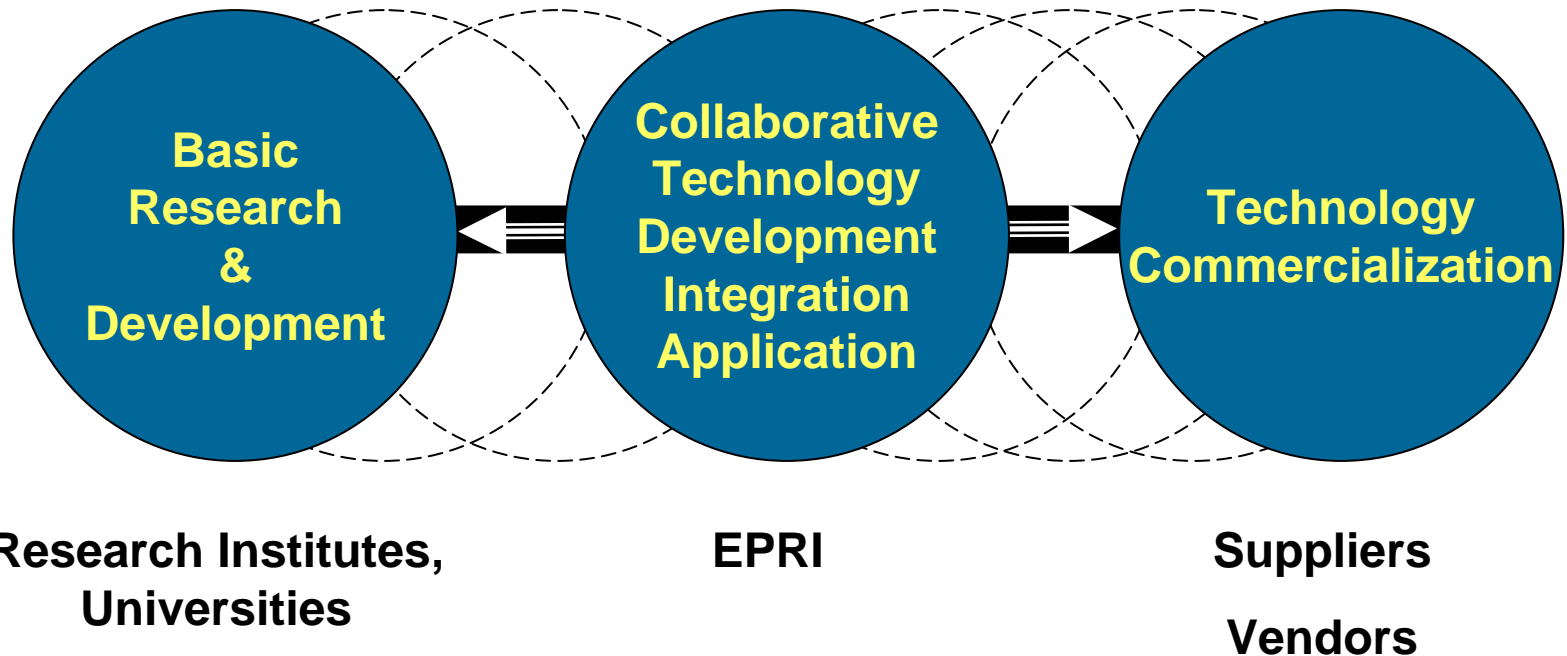
- Founded in 1973
- Objective, non-profit electricity collaborative research organization
- Technology development, integration, demonstration and application
- Broad technology portfolio ranging from near-term solutions to long-term strategic research (Technology Innovation Program)

# One of the World's Largest & Most Successful R&D Collaborations



- Over 700 North American members alone
- Over 130 international participants
- Independent electricity research
  - Major issue focus
  - Major opportunity focus

# EPRI's Role in the Technology Development to Commercialization Cycle



**Depends On The Specific Technology**

# Extensive Energy Research Program



## Generation

Distributed Resources  
Fossil Steam Plants  
Combustion Turbines  
Market Analysis  
Renewables  
Hydroelectric



## Nuclear Power

Equipment Reliability  
Nuclear Operations &  
Asset Management  
High Performance Fuel  
Nondestructive  
Evaluation  
High Performance  
Workforce  
Risk/Safety Mgt



## Environment & Energy Analysis

Air Quality  
Global Climate  
Change  
**Land & Groundwater**  
Water & Ecosystems  
Electromagnetic  
Fields (EMF)  
Occupational  
Health & Safety



## Power Delivery & Markets

Transmission  
Substations  
Grid Reliability  
Power Markets  
Distribution  
Power Quality  
Energy Utilization

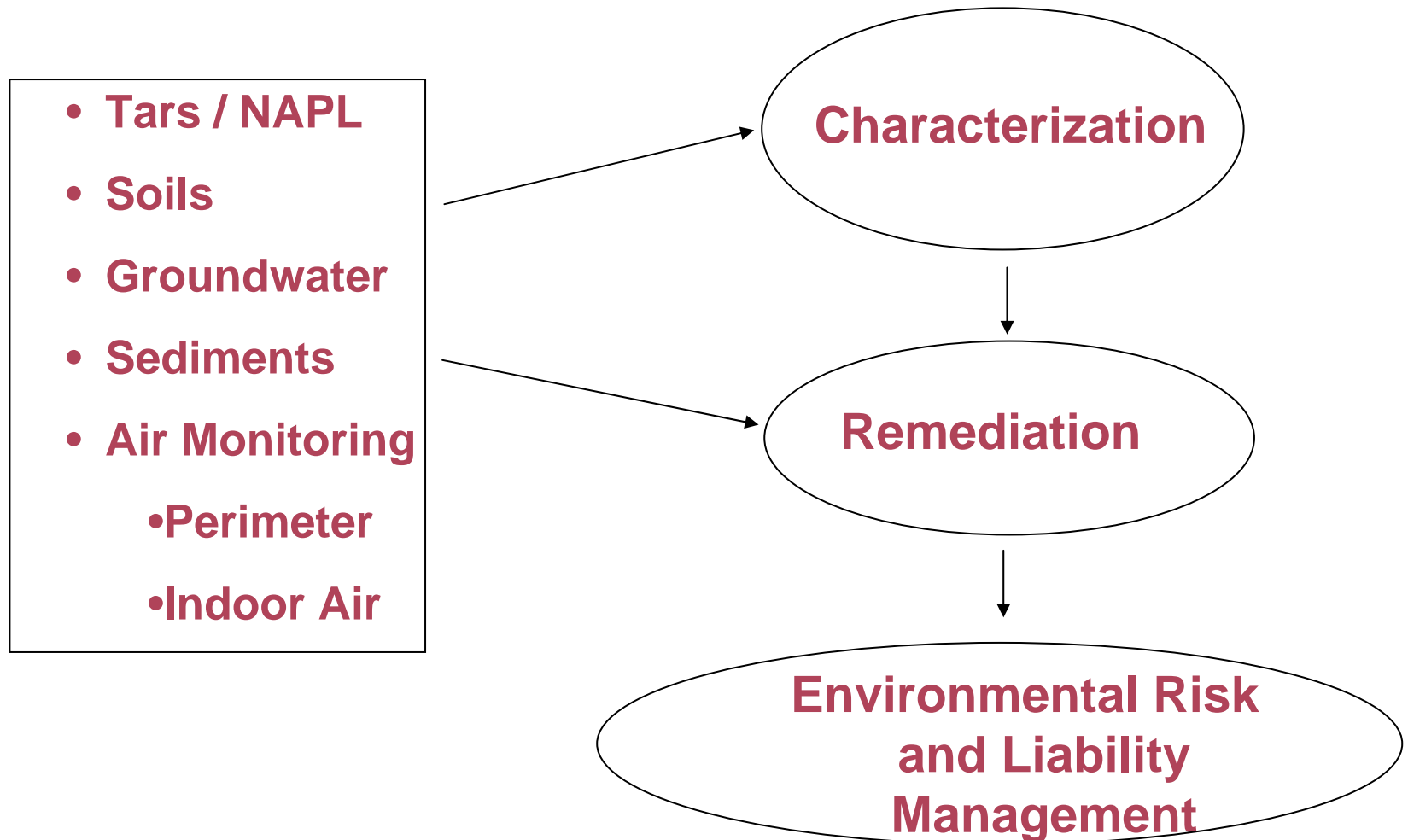
# EPRI Fundamentals

- R&D generally performed by subcontractors (over 1600 ongoing projects)
- R&D not intended to develop alternatives for available suitable products
- Generalized research results accessible to public, commercialized (400 patents and 1000+ current products)
- EPRI owns results of research

# Collaboratively Funded Manufactured Gas Plant (MGP) Site Management Issues

- Developing in-situ technologies that reduce or eliminate the need for “dig and haul”
- Forensics and Fingerprinting
  - MGP residuals
  - Non-Aqueous Phase Liquids (NAPLs)
- Off-site emissions/odor issues
- Methods and techniques for remediating sediments
- Human and ecological risks

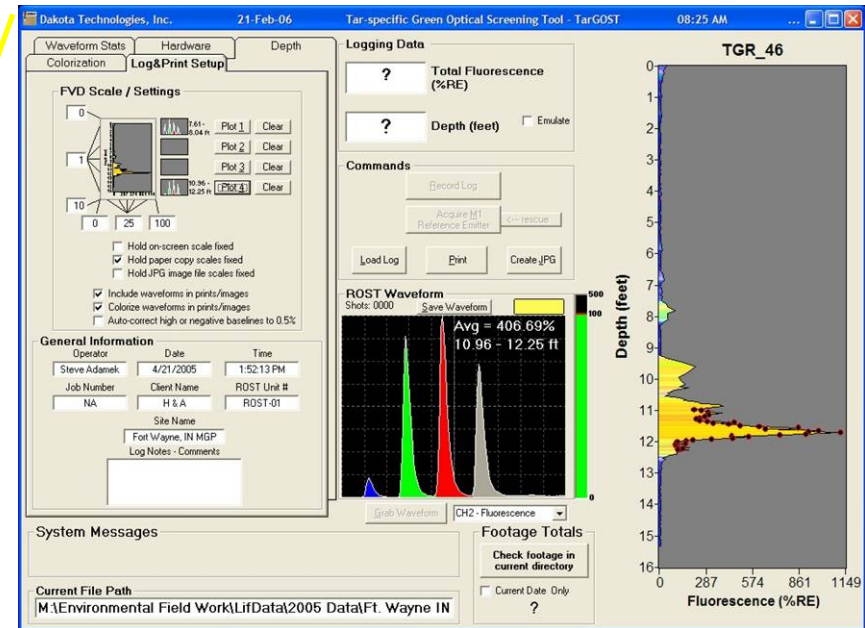
# EPRI's MGP Research Portfolio



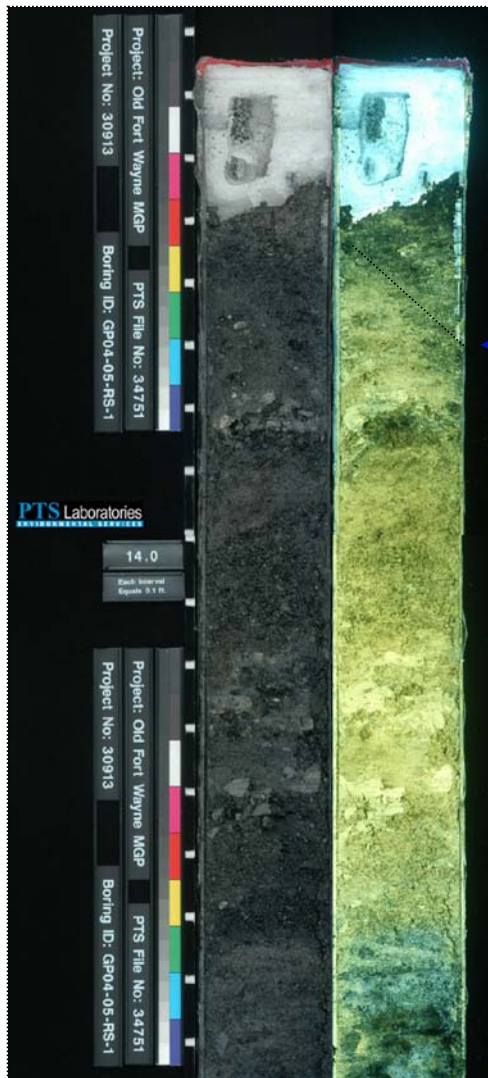


# MGP Characterization in Soil

- EPRI is credited for validating some down-hole *Screening Tools* such as Tar Specific Green Optical Screening Tool (TarGOST®)
  - Rapid
  - Inexpensive
  - Reliable



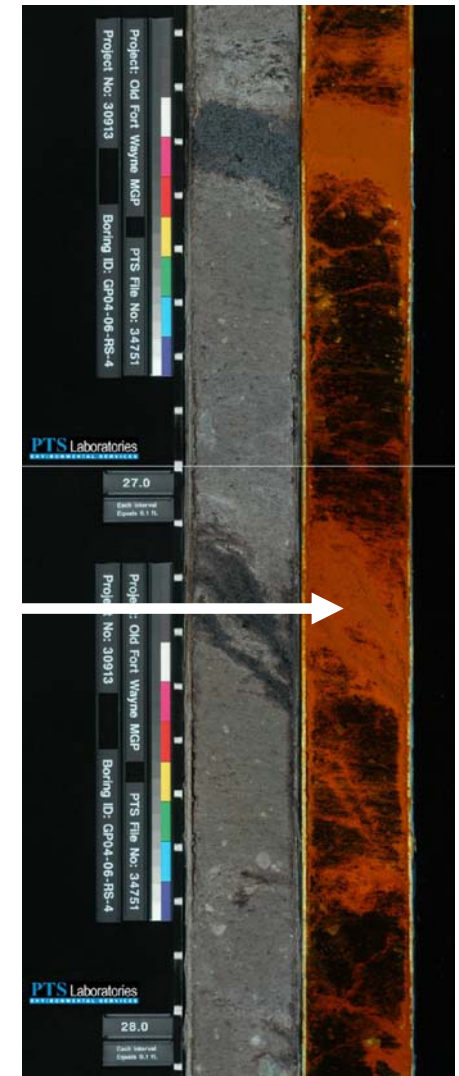
# Fluorescent Core Photography verifies TarGOST Results



← “Light-end” LNAPL

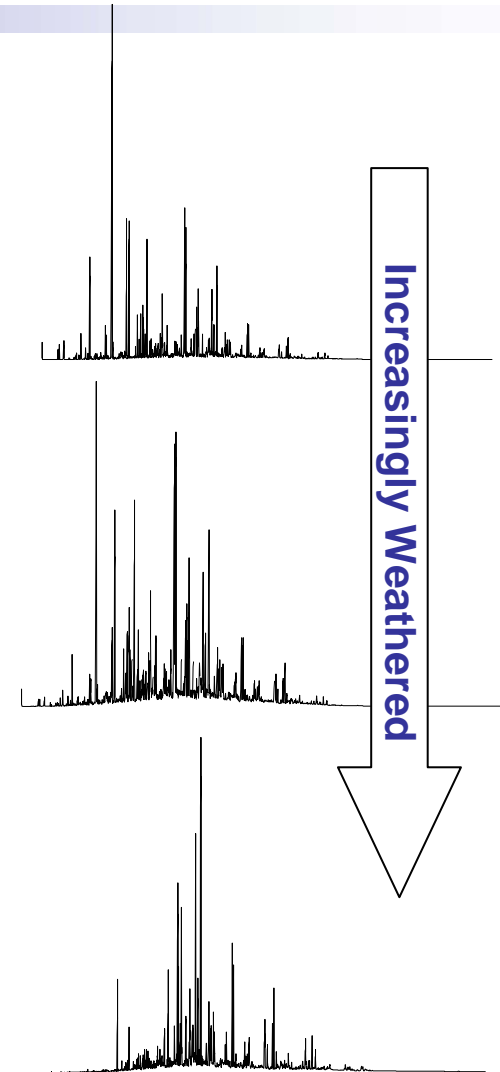
Heavier DNAPL oil

Note: Fluorescent photography performed by PTS Laboratories, Santa Fe Springs, CA

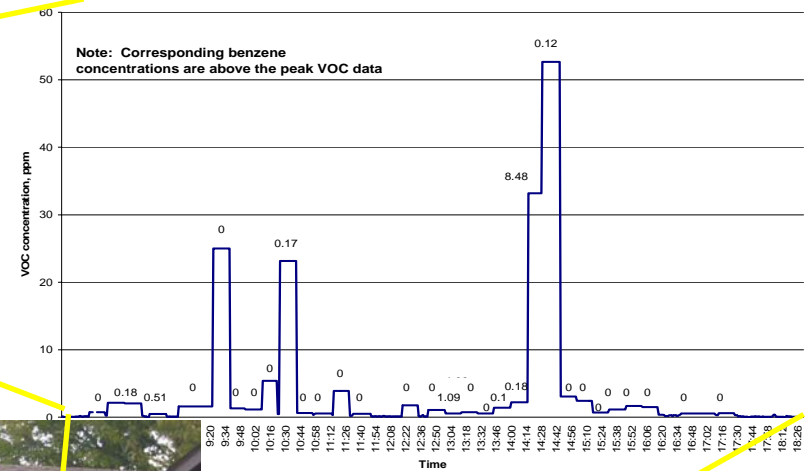
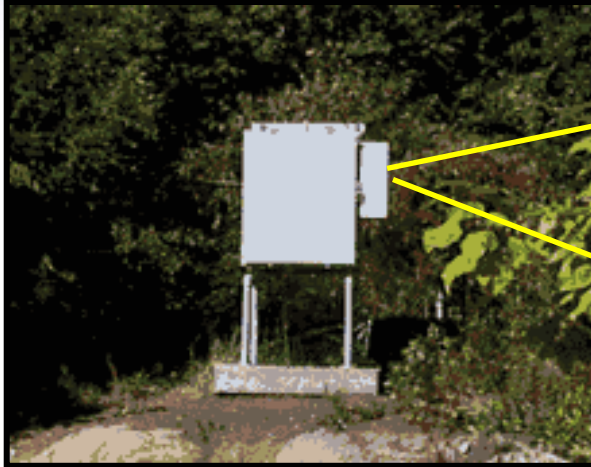


# Source Identification

- Using forensic techniques to identify and measure degradation products of hydrocarbon-type contaminants
- Additional line-of-evidence for the effectiveness of natural and engineered remediation projects



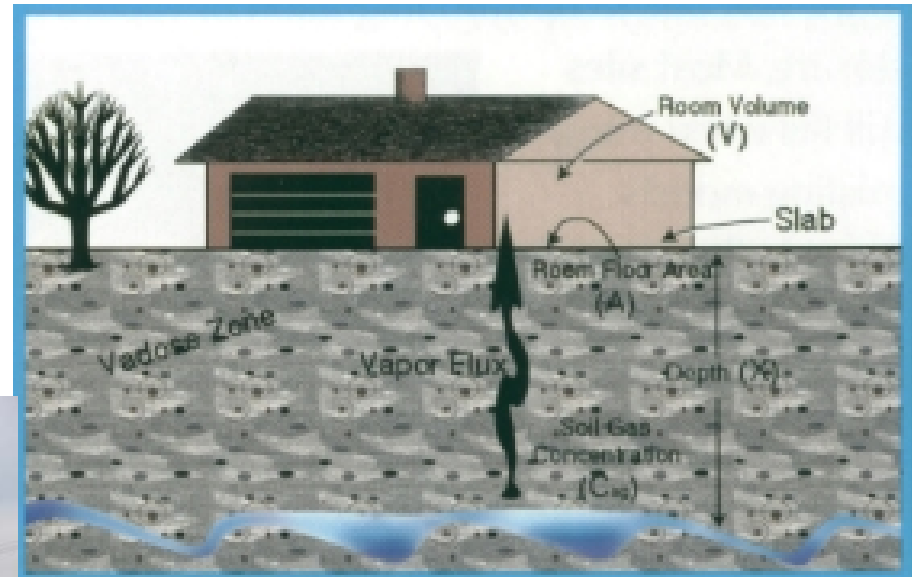
# Air Monitoring: Fixed and Portable Air Monitors produce Total Hydrocarbon Concentration vs. Benzene readouts





# MGP – Air Monitoring

## Soil Vapor Intrusion – Indoor air quality



Finding better ways to monitor for and identify any potential MGP-related airborne contaminants

# MGP Remediation

- Typically relies on '*dig and haul*' technologies



Foaming excavation  
For odor control

Excavating soils at an MGP site

Remediating sediments at an MGP site



# Testing alternative strategies when dig and haul is not an option

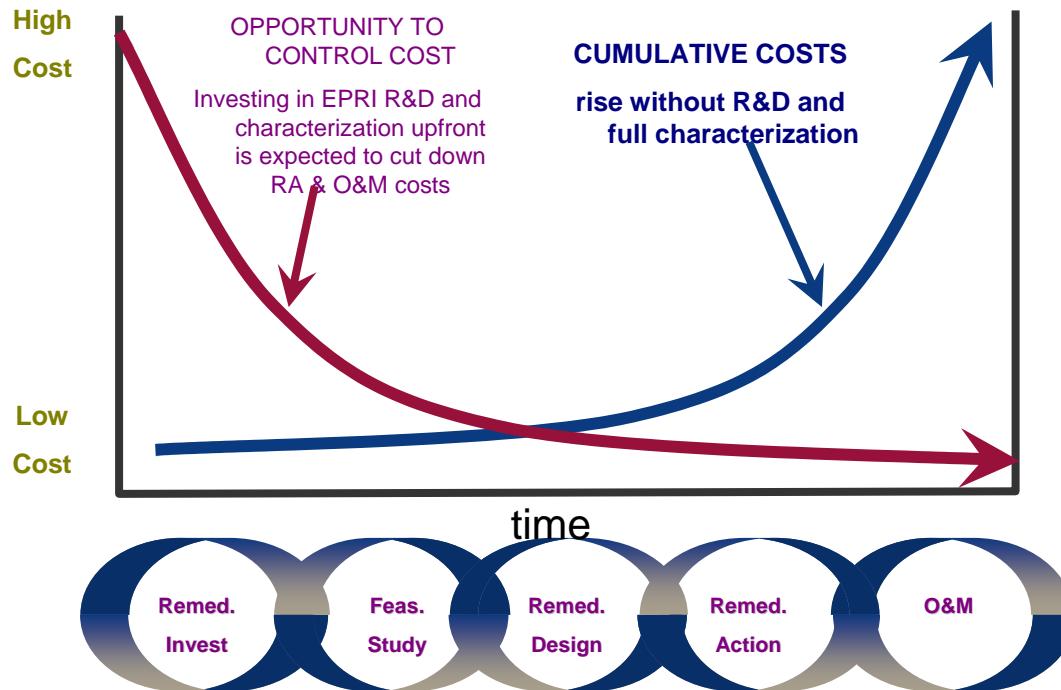
- Using In-situ Technologies instead of 'dig and haul'
  - Advanced Chemical Oxidation



- In-Situ Stabilization/Solidification
  - Barrier walls along rivers
  - Site wide solidification
  - High pressure grouts



# EPRI MGP Program focuses on using R&D to assist in Reducing Long-Term Costs to Utility Industry



Long Term Spending Timeline on MGP Sites

An investment in R&D during the RI Phase is anticipated to lower long term O&M costs