

#### Media Briefing

#### **Action Plan**

**Environmental Remediation in and around UCIL, Bhopal** 

Round Table Meeting, April 25-26, 2013



#### Action Plan

- Developed by Expert Participants over two days of deliberations
  - Time bound and action oriented that do not pile up over those from past
  - Address the existing institutional logiam
  - Implemented through a fast track transparent mechanism with CPCB as the nodal supervisory agency
  - Involve local community from Bhopal



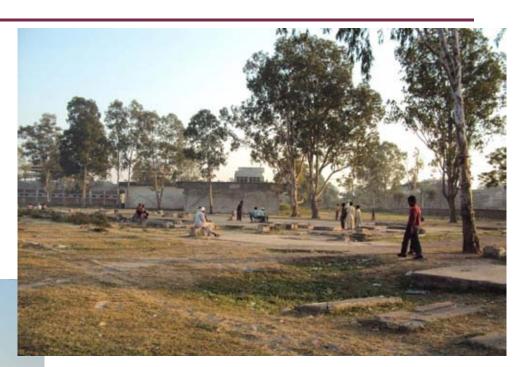
## Immediate Measures

- Securing the site and preventing annual runoff of contaminated water (Three months)
  - a. Fencing and guarding of UCIL site and the landfill area within the SEP to prevent access to people (Immediate)
  - b. Stopping construction at the SEP area (Immediate)
  - c. Measures to be taken to protect annual runoff from the site during monsoon (Immediate)



# UCIL Site and SEP Area, As of 2009

Solar Evaporation Pond Area



Children playing at the UCIL site



#### Immediate Measures

- Excavation, recovery and characterisation of waste dumped at the UCIL site (Six months)
  - a. Clearing of vegetation and dewatering the site (One month, post monsoon)
  - b. Identification and refurbishment of a temporary storage area for the excavated waste (*Three months*)
  - c. Excavation and recovery of dump materials from already identified and new sites (*Three months*)
  - d. Recovery of mercury present in drains, pan filters, buried in soil with help of local community (*Three months*)
  - e. Characterisation and inventorisation of the collected waste for proper treatment and/or disposal (Six months)



# Toxic Waste at UCIL, As of 2009

#### Waste dump site at UCIL





Mercury found at UCIL



#### Immediate Measures

- Characterisation and incineration of the stored waste at the UCIL site (Six months)
  - a. Trial at the Pithampur incinerator with 10 tonnes of similar waste from Hindustan Insecticides Limited, Kerala (*Three months*)
  - b. Characterisation results of the stored UCIL waste to be made public and if required, further characterisation and inventorisation is to be done in parallel with trials (Three months)
  - c. Waste with high calorific value and hazardous in nature to be incinerated with continuous stack monitoring; remaining waste to be dealt with suitable decontamination/remediation measures (Six months)



#### Medium-and Long-term Measures

- Groundwater contamination assessment and remediation outside the UCIL site (Two-three years)
  - a. Field investigation and lab analysis of the groundwater (One year)
  - b. Possibility of hydraulic containment to be explored as an interim measure (Six monthsone year)
  - c. Remediation/containment plan to be developed and implemented (Two-three years)



#### Medium-and Long-term Measures

- Characterisation and remediation of waste dumped in landfill in the SEP area (One-two years)
  - a. Characterisation of waste and development of a basket of disposal/decontamination/remediation methods (One year)
  - b. Disposal/remediation of the waste and decontamination of the landfill area (One-two years)



#### Medium-and Long-term Measures

- Remediation of the entire SEP area (Three-five years)
  - a. Assessment of the need of geo-hydrological and contamination analysis based on previous reports (Three months)
  - b. If required, SEP to be studied for waste characterisation and source of contamination (One year)
  - c. Development and implementation of remediation plan keeping residential purpose in mind (Three-five years)



## Medium and Long-term Measures

- Detoxification, dismantling and decommissioning of the UCIL plant, machinery and structure (Two years)
  - a. MIC plant including the vent, vent scrubber, storage tanks and control room to be strengthened and preserved (*Two years*)
  - b. Remaining parts of the site to be decontaminated, dismantled and decommissioned as suggested by the IICT (Two years)



## Plant and Machinery, As of 2009

#### Vent Gas Scrubber at UCIL





Plant Machinery at UCIL



#### Medium and Long-term Measures

- Remediation of the UCIL site (Three-five years)
  - a. Geo-hydrological and contamination studies based on stratified judgmental sampling (Two years)
  - b. Development of a basket of decontamination/disposal methods accordingly (Two-three years)
  - c. Remediation plan based on findings and future use as memorial and centre of excellence (Two-three years)
  - d. An international workshop/competition on master planning for conversion of the site (One year)
  - e. Implementation of the remediation and conversion of the site to a memorial and center of excellence (Three-five years)