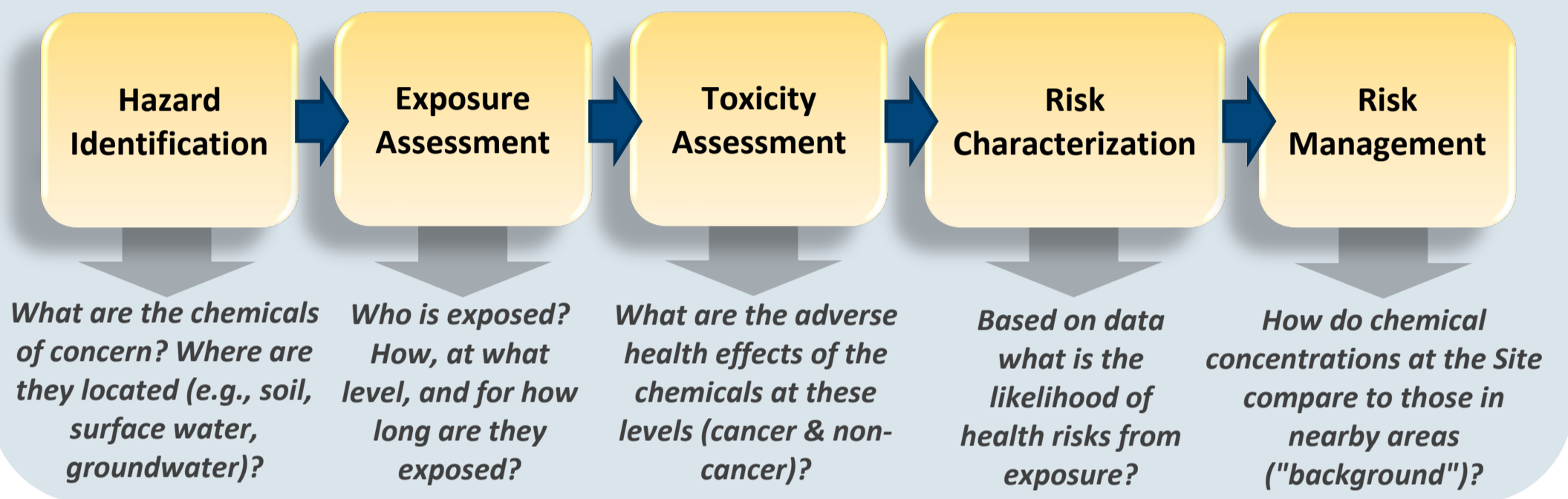




# What is Risk Assessment?

➤ A tool used to quantify the probability of a harmful effect to individuals or populations from certain hazards in the environment (e.g., chemicals in soil). Risk Assessment is completed during the Remedial Investigation phase of CERCLA.

## Risk Assessment (RA)/Evaluation Process:



## Human Health Risk Assessment Scenarios:

- 'Backyard' Resident
- Typical Park Visitor

**Ingestion**  
Soil/dust transferred onto hands or food

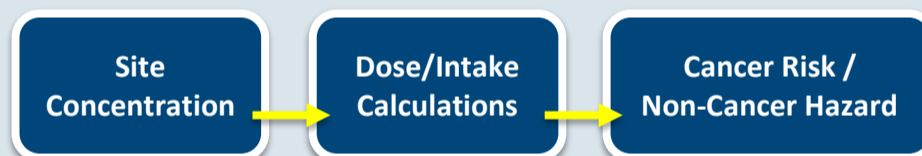


**Inhalation**  
Dust

**Absorption**  
Through skin



## When is Risk Considered Unacceptable?



**Excess cancer risk** - expressed as a probability of cancer in the general population, above and beyond "background" cancer incidence rates. (e.g., one excess incidence of cancer in one million people from exposure to chemicals at a site)

Risk of Developing Cancer over Lifetime in U.S.	+	CERCLA Target Excess Cancer Risk Thresholds
1 in 3		1 in 10,000 to 1 in 1,000,000

Source: International Agency for Research on Cancer/WHO, 2018

**Non-cancer "risks"** are described as a number called the Hazard Quotient (HQ). The HQ is the ratio of the estimated daily dose to the safe dose. If the daily dose is less than the safe dose (i.e., the HQ is less than 1.0), people are not likely to be harmed. However, if the HQ is above 1.0, there is a potential for concern.

## Ecological Receptors Risk Assessment Scenarios:

- Aquatic Invertebrates
- Birds
- Fish
- Terrestrial Animals



## How are Risk Assessment Findings Used?

- To identify areas of the site that pose risks that are considered unacceptable
- To determine where and how much remediation (clean up) is necessary